

# **FLEET NUMERICAL METEOROLOGY AND OCEANOGRAPHY CENTER**

## **OPTIMUM PATH AIRCRAFT ROUTING SYSTEM (OPARS) USER MANUAL**



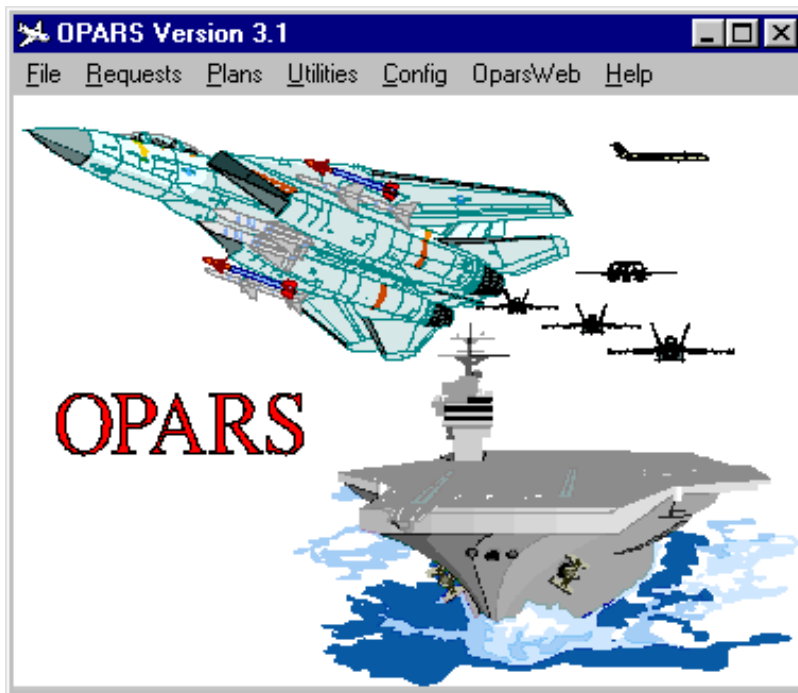
**FNMOC OPARS-UM-3.100 20031010**

**October 10, 2003**

**Fleet Numerical Meteorology and Oceanography Center  
7 Grace Hopper Ave., STOP 1  
Monterey, CA 93943-5501**

# FLEET NUMERICAL METEOROLOGY AND OCEANOGRAPHY CENTER

## OPARS USER MANUAL



FNMO C OPARS-UM-3.100 20031010

October 10, 2003

# OPARS USER MANUAL

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## FOREWORD

This document will be reviewed and updated by the Fleet Numerical Meteorology and Oceanography Center as required to maintain currency. Comments and recommendations for change may be forwarded for review and incorporation to:

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Code 521  
Fleet Numerical Meteorology and Oceanography Center  
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## **RECORD OF CHANGES**

<b>Date</b>	<b>Description</b>

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





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## 1. INTRODUCTION

### 1.1 IDENTIFICATION

This User Manual complements the Optimum Path Aircraft Routing System (OPARS) Client software application, Version 3.1.

### 1.2 PURPOSE

The primary purpose of OPARS is to provide a flight planning service to the Naval Aviation community. A recommended customized flight plan is provided by using sophisticated computer programs to analyze the latest environmental forecast data and the most fuel-efficient flight profile for a specific aircraft. OPARS has options to allow the aviator to analyze many of the variables in flight planning. If a known fuel load and cargo combination is entered into OPARS and the recommended route/altitude profile is acceptable, then all that is necessary is to fill out the DD forms, check with the duty weather forecaster, file the flight plan, and head out to the aircraft. When airborne, expected winds and fuel usage are compared with actual flight conditions to evaluate the accuracy of the flight plan and determine if an additional fuel on-load is warranted.

Or, you may want OPARS to calculate:

- Amount of fuel to load to arrive with a specified reserve
- Maximum time on station
- Maximum cargo/stores for a particular flight
- Amount of fuel needed to “top off” for in-flight refueling
- Mandatory over water reporting positions
- Fuel usage for specific route and/or altitude

The OPARS Client software has been designed to work with the Microsoft Windows operating system and take advantage of the graphics capability of your personal computer. Communications functions are included as part of the software to allow your computer to interface with the Fleet Numerical Meteorology and Oceanography Center OPARS computer. Access is available via NIPRNET, SIPRNET, or Internet connectivity.

The following pages will briefly describe how OPARS works and how you can get a customized flight plan.

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## 1.3 SYSTEM OVERVIEW

For a computer to calculate an accurate flight plan, several areas must be taken into consideration.

- The flight performance data for a specific aircraft airframe, engine(s), and drag configurations must be available.
- Winds and temperatures must be accurately forecast for the actual flight time.
- The Air Route structure database must be complete and correct.
- Computer programs must simulate the flight over many possible paths and rapidly determine which profile will be the most fuel-efficient.

Aircraft performance data is derived from the appropriate NATOPS or commercial performance manual and is divided into climb, cruise, and descent profiles (See Appendix E for a list of the available aircraft). Once developed for the flight planning database, these data sets are not changed until a specific update request is received from the user community or updates to the appropriate manuals are issued. A subset of this aircraft data is stored on the OPARS user PC to assist in building the flight plan request. A “setup” function allows the user to store default values for the specific aircraft parameters. Refer to Section 6.1.4 OPARS Request Editor (Aircraft) for instructions on how to enter aircraft parameters.

Sophisticated computer models at Fleet Numerical collect data from many sources and then analyze and forecast wind and temperature data for flight levels from 10,000 ft. through 45,000 ft. and forecast periods out to 72 hours. OPARS uses the appropriate forecast flight level winds and temperature data for the time of your flight. This data is maintained in the OPARS database and is updated every twelve hours. Climatology data is also available for long-range planning outside the current forecasts times.

Based on the Digital Aeronautical Flight Information File (DAFIF) database, the OPARS Aeronautical database comprises information about high altitude airways, low and high altitude Navaids and Waypoints, and airports with runways longer than 5,000 ft. This database also includes boundary data used to depict Flight Information Regions (FIR), Upper Information Regions (UIR), Air Defense Identification Zones (ADIZ), and Special Use Airspaces (SUA). The worldwide Digital Aeronautical Flight Information File (DAFIF) database is updated every 28 days, corresponding with the Flight Information Publication (FLIP) update cycle. Updated subsets of the OPARS Aeronautical database used by the OPARS PC software are made available for download from Fleet Numerical every 28 days (see [Appendix G](#)). The database subset provides the information that allows the OPARS user to graphically depict and select flight plan routing. It also increases accuracy in route selection because only valid airways are displayed for selection. Refer to Section 6.1.3 OPARS Request Editor (POD/POA) for instructions on how to select your routing.

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Using the OPARS software on the PC, a flight plan request is built by the user for a specific flight. Integrated communications software then submits the request to the Fleet Numerical computers for processing. When finished, the computed flight plan recommendation is returned to the user's PC. The flight plan can now be displayed in text or graphic format and it may be printed using one of the fifteen pre-defined output formats.

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## 2. REFERENCED DOCUMENTS

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<<http://164.214.2.62/products/digitalaero/daifindex.cfm>>

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## 3. SOFTWARE SUMMARY

### 3.1 SOFTWARE APPLICATION

OPARS is a preflight planning aid that integrates forecast atmospheric conditions with the pilot's proposed flight profile to provide an optimized flight plan that minimizes fuel consumption and time en route for each leg. OPARS serves as a supplement to the DD-175 (Military Flight Plan) and DD-175-1 (Flight Weather Briefing). The OPARS application is also used by the Naval Portable Flight Planning System (N-PFPS) to provide flight level winds for mission planning purposes.

### 3.2 SOFTWARE INVENTORY

The file `opars30.exe` is a self-extracting compressed file that will install OPARS in the designated folders. Appendix A contains a listing of the distribution files. The installation file is distributed by CD-ROM or is downloaded from the Fleet Numerical Web site at <https://www.fnmoc.navy.mil/DOD/SOFTWARE>

### 3.3 SOFTWARE ENVIRONMENT

The following hardware and software requirements pertain to the installation and operation of OPARS:

- OPARS Version 3.1
- Windows 95, Windows 98, Windows Me, Windows XP, or Windows NT and Windows 2000 Operating Systems
- Microsoft Internet Explorer 5.5 or later (although Internet Explorer is not required for OPARS, certain Dynamic Link Libraries associated with Internet Explorer are used by OPARS)
- PC - 486 or later
- CD-ROM drive
- At least 40 MB of hard disk storage available
- NIPRNET, SIPRNET, or Internet connectivity

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## 3.4 SOFTWARE ORGANIZATION AND OVERVIEW OF OPERATION

OPARS consists of a set of computer programs that select optimum fuel efficiency routes for aircraft. Within the context of OPARS, an optimum route is defined as the selected aircraft path and altitude that is constrained by aircraft performance parameters, weather conditions, flight regulations, and minimum total fuel consumption. OPARS comprises four sub-systems:

- 1) Communications. Provides an interface for the OPARS user to generate and submit OPARS requests and for the OPARS Duty Petty Officer, at Fleet Numerical, to monitor, control, and assist in the flight plan development.
- 2) Flight Planner. Computes the optimum route and performance parameters for the specified aircraft configuration.
- 3) Aeronautical Database. Consists of aircraft performance characteristics, route structures, and boundary information required by the OPARS Flight Planner module. Information for the Aeronautical Database is taken from the DAFIF.

**Note:** The OPARS Aeronautical Database is updated every 28 days. To update the database subset stored on the user's OPARS PC, select the AeroDb Download option from the OPARSWeb menu. The effective dates of the updated Aeronautical database may be viewed by using the Show Version option from the Help menu. See [Appendix G](#) for the update procedures.

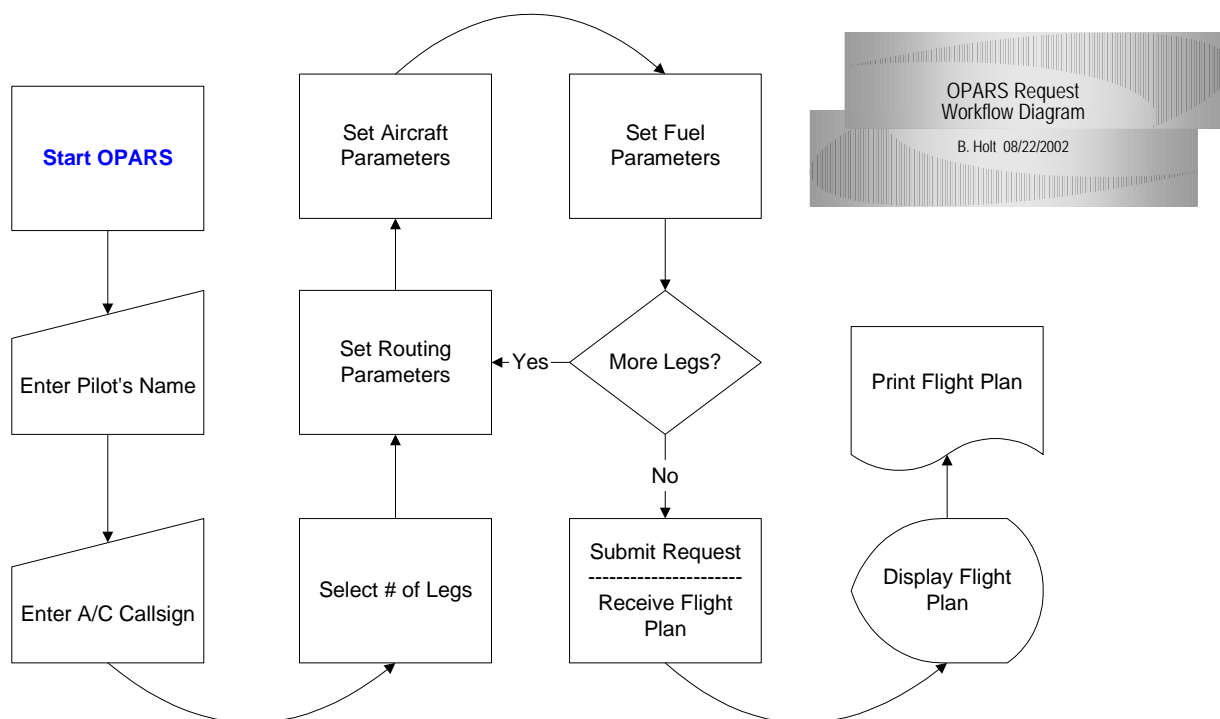
- 4) Environmental Database. Consists of wind and temperature fields for flight levels (1,000 ft. through 45,000 ft.). Fields are produced twice daily and are derived from the Fleet Numerical Naval Operational Global Atmospheric Prediction System (NOGAPS) forecast model. Wind and temperature fields based on climatology are also available.

The OPARS user is the individual interacting through a personal computer linked with the Fleet Numerical computer system. The OPARS user builds a flight plan request on their computer with the aid of a graphical user interface and submits the flight plan request to the Fleet Numerical host computer for processing. Included within this request will be such information as aircraft type, number of flight legs, points of departure, times of departure/arrival, points of arrival, and other pertinent information.

After the flight plan request is submitted to and accepted by the host system, OPARS begins selecting an optimum route for the aircraft to fly. During this building process, OPARS uses the aircraft parameters and the wind data to simulate the flight on possible routes between the point of departure and the point of arrival. After analysis, the route that provides optimum fuel consumption is selected for the flight plan. As the final step in the process, the information is formatted as a flight plan and downloaded to the OPARS user's personal computer. Print out and delivery to the flight personnel completes the process.

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**Figure 1. Simple OPARS Request Workflow**

Figure 1 is a workflow diagram for a simple OPARS flight plan request that accepts all program defaults. The user may set many of the parameters in the Routing, Aircraft, and Fuel dialogs. Up to six standard legs can be selected for each flight plan. Routing, Aircraft, and Fuel parameters must be set for each flight plan leg. Optional parameters that can be set for each flight plan leg include Weather, Refuel, Divert, Alternate, Altitudes, and Miscellaneous.

## 3.5 CONTINGENCIES AND ALTERNATE STATES AND MODES OF OPERATION

If the user cannot get computer access to the Fleet Numerical OPARS Server, they can submit their OPARS Request by telephone by calling the OPARS Duty Petty Officer at:

- (Toll Free) 1-888-745-6431
- (International DSN) (312) 878-4371 or 4453
- (Commercial) 831-656-4371 or 4453
- (E-mail) cdo@fnmoc.navy.mil

There are no alternate states and modes of operation for OPARS.

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## 3.6 SECURITY AND PRIVACY PROTECTION

FNMOCC will have a separate OPARS SIPRNET server that will process OPARS requests received via SIPRNET. Users will have to use secure terminals connected to SIPRNET to submit classified OPARS requests.

There are no privacy protection issues with OPARS.

## 3.7 ASSISTANCE AND PROBLEM REPORTING

### 3.7.1 FREQUENTLY ASKED QUESTIONS

Answers to Frequently Asked Questions regarding OPARS are available on the Internet at [https://www.fnmoc.navy.mil/PUBLIC/ADMIN/FAQS/faq\\_opars\\_gen.html](https://www.fnmoc.navy.mil/PUBLIC/ADMIN/FAQS/faq_opars_gen.html)

Topics covered include: General, Aircraft types, Program requirements, and Output problems.

### 3.7.2 OPARS DUTY PETTY OFFICER

Available 24 hours per day, 7 days per week.

Commercial: 831-656-4453/4325

DSN: 878-4453/4325 (Outside CONUS use 312-878-4453/4325)

E-mail: [cdo@fnmoc.navy.mil](mailto:cdo@fnmoc.navy.mil)

### 3.7.3 TECHNICAL ASSISTANCE

Available Monday through Friday, 0800-1700 Pacific Time (Time Zone U).

Commercial: 831-656-4486

DSN: 878-4486 (Outside CONUS use 312-878-4486)

E-mail: [opars@fnmoc.navy.mil](mailto:opars@fnmoc.navy.mil)

### 3.7.4 REQUESTING AN OPARS FLIGHT PLAN BY TELEPHONE

Flight plans may be requested by telephone. Call the OPARS Duty Petty Officer at 1-888-745-6431 (toll free).

# OPARS USER MANUAL

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## 4. ACCESS TO SOFTWARE

### 4.1 FIRST-TIME USER OF THE SOFTWARE

#### 4.1.1 EQUIPMENT FAMILIARIZATION

The OPARS program has a menu bar at the top of the main screen (the main screen is the picture of the airplanes and aircraft carrier) under the OPARS Version 3.1 Title Bar. There are five main menus, as shown in Figure 2.

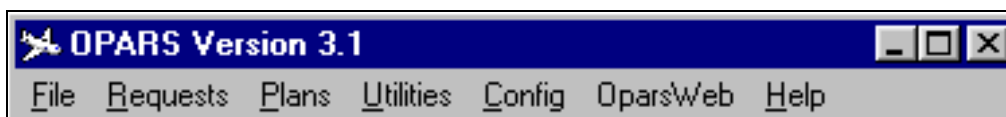


Figure 2. OPARS Menu Bar

##### 4.1.1.1 FILE

These are the more general commands for selecting flight plan requests, archiving information, or printing.

##### OPEN

Opens a flight plan request that was previously defined and saved. A complete or a partially defined request can be selected.

##### NEW

Used to start building a new flight plan request.

##### ARCHIVE

Saves either a flight plan request or a flight plan to your hard-drive or to a floppy disk. The default subdirectory is **Archive** on the same disk where OPARS is installed. You may change to any directory that you choose.

##### RESTORE

Restores archived flight plan requests or flight plans back into the OPARS directory from your **Archive** subdirectory.

##### ARCHIVE DELETE

Deletes flight plan requests or flight plans that have been archived.

# OPARS USER MANUAL

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## DISPLAY

Displays the OPARS Bulletin or Aeronautical DB Effective Dates. Current OPARS Bulletin from Fleet Numerical will be displayed if one has been downloaded with a flight plan. When no Bulletin is in effect, this menu item will be unavailable. For the Aeronautical DB, both the effective date and expiration date are displayed.

## PRINT

Prints a copy of either a flight plan request or a flight plan. If a flight plan is selected, you will then be prompted for the type of output format. Choices are: Kneeboard1, Kneeboard2, Kneeboard3, Kneeboard4, Kneeboard5, Tactical, USAF-70, USAF-O77, Abbreviated, Kneeboard9, As Downloaded, MAC, CFP, PDA, or Overwater. Output formats are described in Appendix B. A flight plan may also be printed to a file

**Note:** Kneeboard9 and Overwater outputs are only available when the 9KB Fuel Option was selected in the flight plan request. 9KB and Overwater are usually for extended overwater flights by C-9, DC-9, C-130, and C-20 aircraft. See Appendix F. OPARS EXTENDED OVERWATER FLIGHT PROCEDURES.

## PRINTER SETUP

The user may select print fonts, font size and style, size of left margin, and landscape or portrait printout orientation.

## EXIT

Exits the OPARS program.

### 4.1.1.2 REQUESTS

All of the Requests menu commands operate on the current flight plan request or on previously saved requests.

## PREVIEW

Used to preview the flight plan request input values before submitting it for processing. Each data item in the flight plan request is listed in the format that it will be submitted to the Fleet Numerical OPARS computer. Options provided are Print, Submit, or Exit.

## SUBMIT

Sends the current flight plan request to the Fleet Numerical OPARS computer for processing. Submit command will automatically invoke the communication software and make the connection to the computer.

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## RETRIEVE

Used to retrieve a flight plan subsequent to a previously submitted request. The primary purpose of this option is to retrieve a flight plan after communications were interrupted during the submission and processing of the request. Both Common Route Definition (CRD) and Normal Flight Plan (NFP) formats are available. Flight plans are retained on the Fleet Numerical computer for 48 hours.

## PRINT

Prints a copy of a flight plan request as shown in Figure 3. The request is printed in the same script format in which it is submitted for processing. Each data item is listed along with the associated value.

```
(OPARSGLO
(products
  (opars
    (header
      (USER solFaGen1)
      (VERSION 3.1)
      (PILOT LT TAMERLANE)
      (UNIT VRX-111)
      (OMODE DWN)
      (FLTDATE 21MAR2001 ))
    (LEG
      (ACTYPE C9BFNF)
      (OPWT 65000)
      (RESERVE C)
      (FUELTYPE JP-5)
      (REFUEL N)
      (BIAS 1323)
      (DC 0)
      (POD AP,KNRS)
      (POA AP,KNW)
      (ROUTING0 D,ENDROUTE)
      (TOD 21MAR2001,0000)
      (TOG 01+25)
    )
    (LEG
      (ACTYPE C9B)
      (OPWT 65000)
      (RESERVE C)
      (FUELTYPE JP-5)
      (REFUEL N)
      (BIAS 1323)
      (DC 0)
      (POD AP,KNW)
      (POA AP,KNGU)
      (ROUTING0 D,ENDROUTE)
    )
    (finished)
  )
)
)
```

**Figure 3. Printout of OPARS Request**

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## DELETE

Deletes flight plan requests that are no longer needed. Flight plan requests to be deleted are selected by the user from the available list. All flight plan requests are saved before submission and this provides a way of cleaning up outdated requests.

## 4.1.1.3 PLANS

All of the commands on the Plans menu pertain to flight plans received from the Fleet Numerical OPARS computer. Primary function is to display or delete those flight plans.

## DISPLAY

The Display menu provides for either Text or Graphics display of flight plans, as shown in Figure 4. Text mode will provide a submenu with fifteen alphanumeric formats from which to choose. Graphics mode will display the flight plan on a color map. Many options are available for changing or enhancing a graphic display.

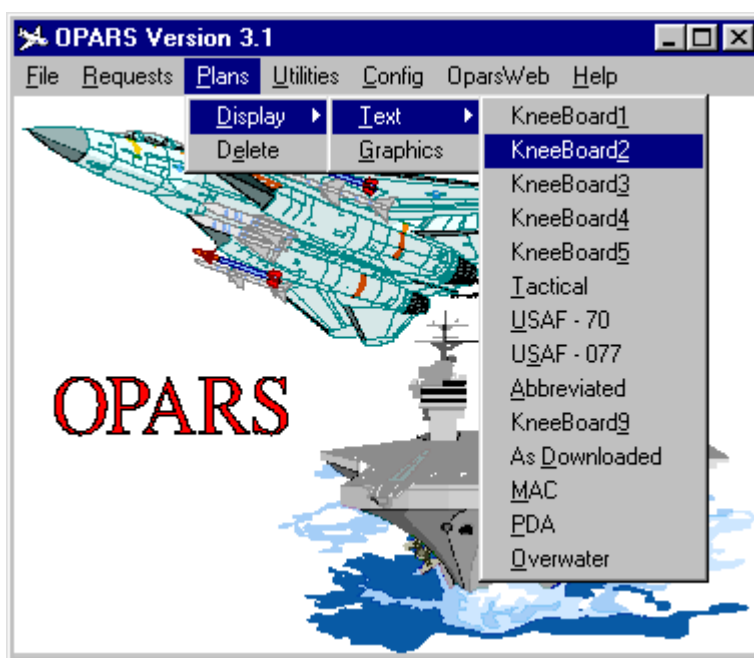


Figure 4. Formats Submenu for Plans Display

## DELETE

The Delete command displays a list of stored flight plans, as shown in Figure 5. Highlighting a plan and clicking **Delete** will remove the plan from the [.. \OPARS \FLGTPLAN](#) folder. Stored flight plans will remain on the hard drive until manually removed using this process.

# OPARS USER MANUAL

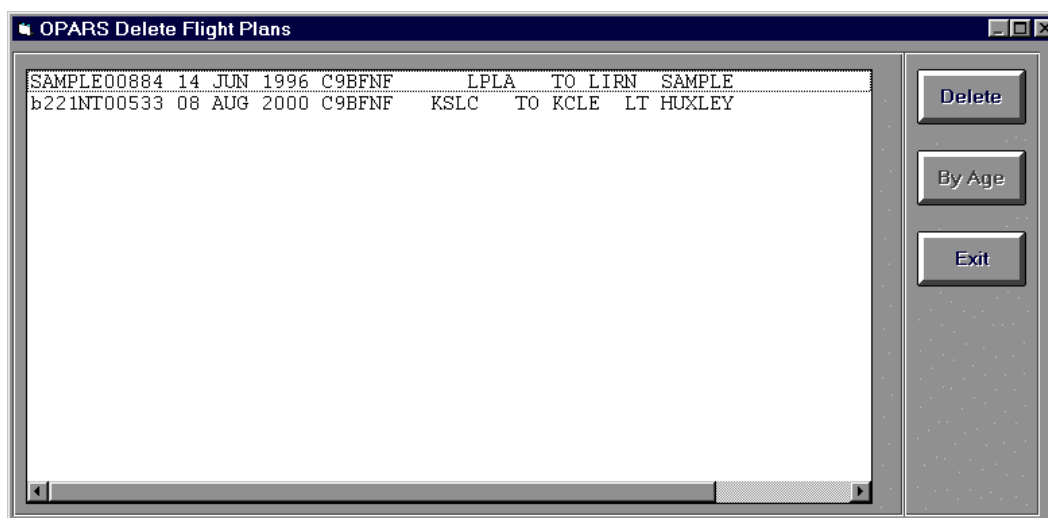


Figure 5. Flight Plan Selection Dialog

## 4.1.1.4 UTILITIES

### AIRPORTS

Displays the Airport Database Search dialog, as shown in Figure 6. The Aeronautical Database may be searched by name, ICAO identifier, or by specified area. The Ident feature uses an incremental search so only partial search fields need be entered. The Name feature offers the options in the Compare area for use in pattern matching.

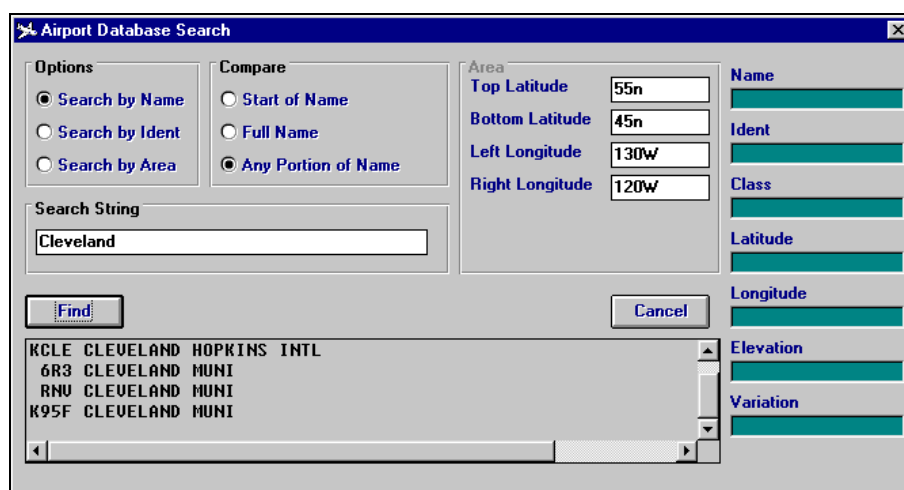


Figure 6. Airport Database Search Dialog

### NAVAIDS AND JET ROUTE PLOTTING

Search for Nav aids in the OPARS Aeronautical Database and displays matching Nav aids as shown in Figure 7. Available Jet Routes are listed and may be graphically displayed by clicking **Plot Selected Jet Route**.

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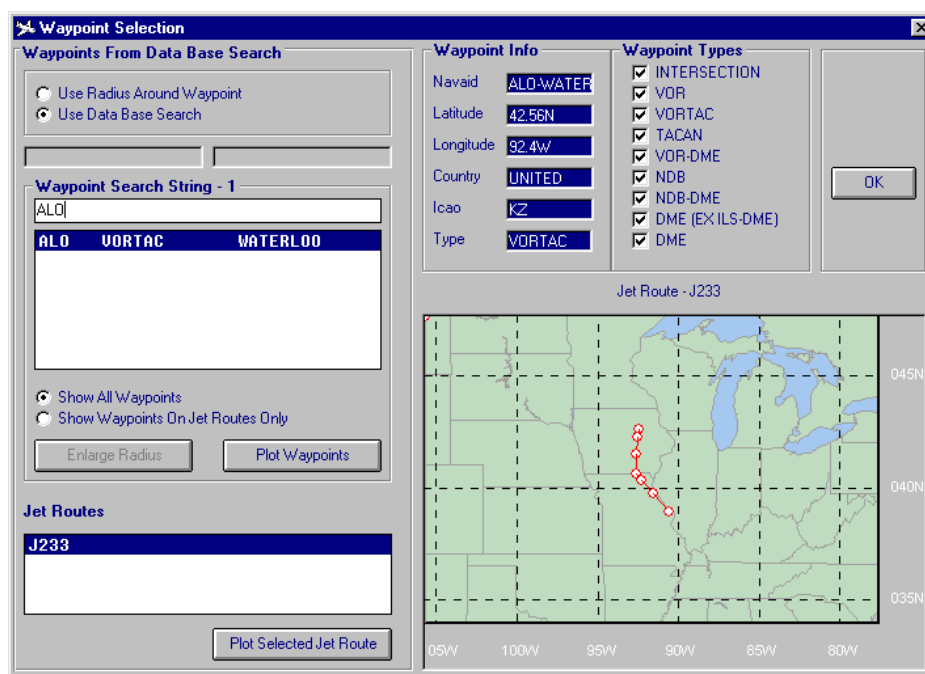


Figure 7. NavAids and Jet Route Plotting Dialog

## JET ROUTES

Displays the Jet Routes search dialog as shown in Figure 8. Listed Jet Routes may be graphically displayed by clicking **Plot Jet Route**.

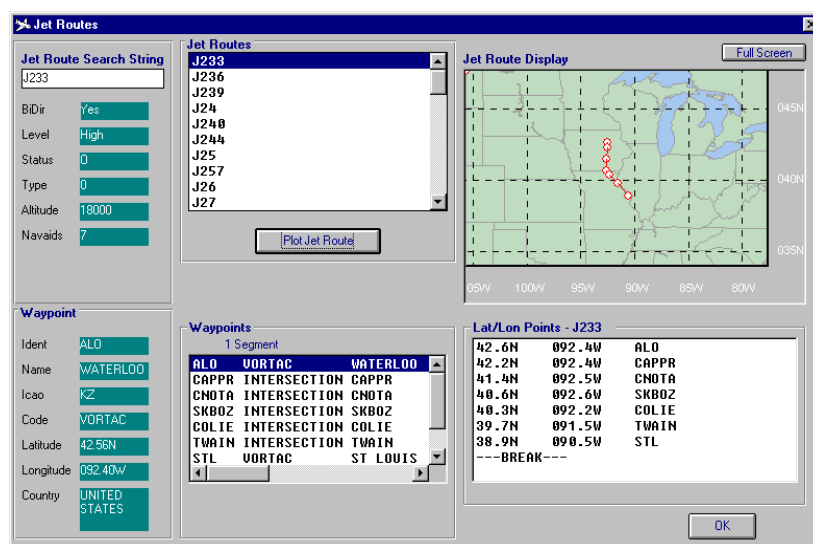


Figure 8. Jet Routes Search Dialog

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## AIRSPACE BOUNDARIES

Displays Airspace and Special Area Boundaries, as shown in Figure 9. Once identified, areas can be plotted for visual reference. Special area boundaries include – Alert, Danger, Military Ops, Prohibited, Restricted, Reserved, and Warning.

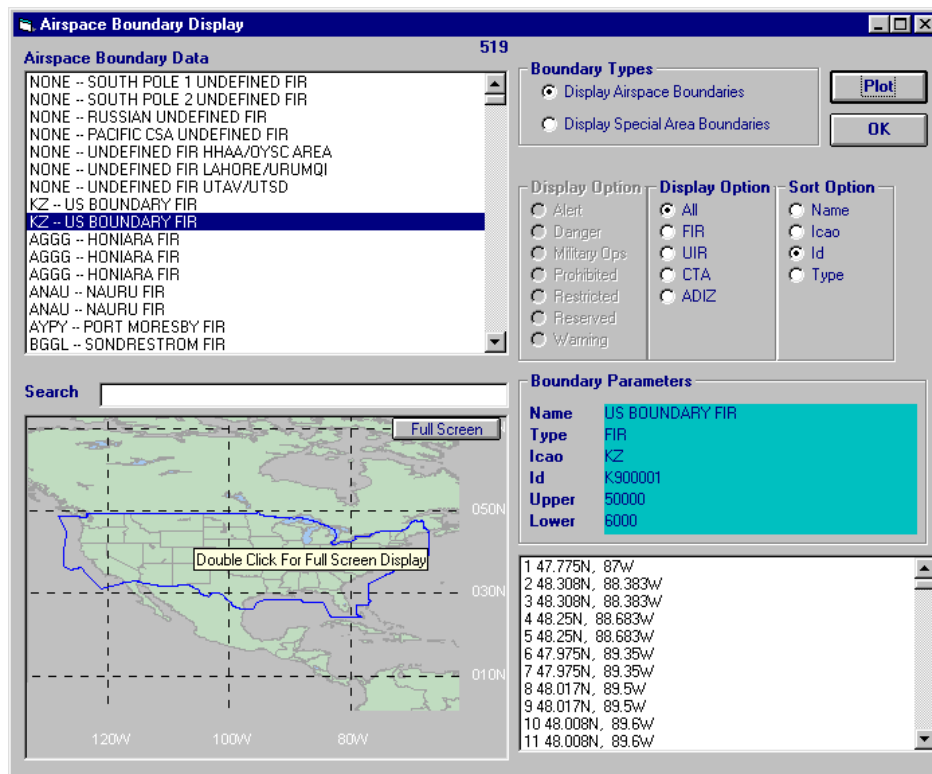


Figure 9. Airspace Boundary Display

## NOTAM WEB PAGE

Opens the OPARS Web browser and navigates to the United States NOTAM Office ([www.notam.jcs.mil](http://www.notam.jcs.mil)) so the flight planner can review effective Notices to Airmen.

## PATHS

Displays the OPARS System and User Paths dialog, as shown in Figure 10. Paths are automatically entered during installation, but may be modified by using the **Change** buttons.

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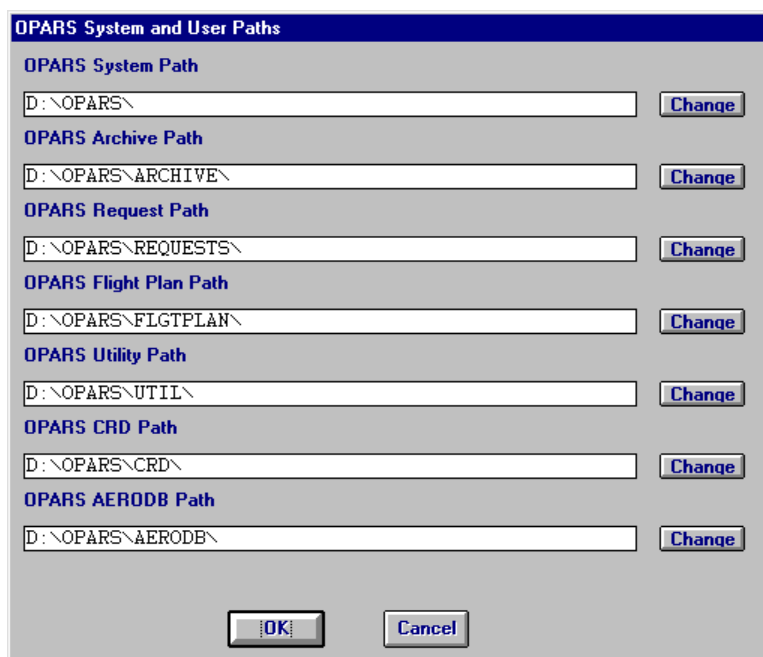


Figure 10. OPARS System and User Paths Dialog

## 4.1.1.5 CONFIG

### COMMUNICATIONS

Used to set the Web server Uniform Resource Locaters (URLs), proxy server information, OPARS user information, and basic flight plan format. A detailed discussion of this command is in Section 5.1 COMMUNICATIONS on page 22.

### REQUEST DEFAULTS

Used to set standard defaults like unit name and aircraft type. This command is discussed in depth in Section 5.2 REQUEST DEFAULTS.

### FLIGHT PLAN GRAPHICS

Used to set color and display options for the user interface. This command is discussed in depth in Section 5.3 FLIGHT PLAN GRAPHICS.

### DISPLAY OPARS LOGO

Toggles the display of the OPARS logo on the startup screen.

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## AIRSPACE BOUNDARIES

As shown in Figure 11, this configuration option provides a menu to customize the display colors of airspace boundaries.



Figure 11. Airspace Boundary Color Setup Dialog

## SPECIAL BOUNDARIES

Displays the Special Boundary Color Setup dialog as shown in Figure 12. Custom colors may be assigned to special airspace areas.

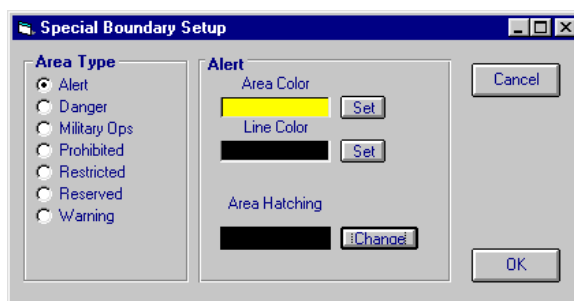


Figure 12. Special Boundary Color Setup Dialog

## FLIGHTPLAN PRINTING

Displays the Flightplan Print Options dialog as shown in Figure 13. These settings determine which of the airspace boundaries will be printed when a flight plan is printed. If any one of the options is toggled off, the print command will prompt the user for confirmation each time before printing a flight plan.

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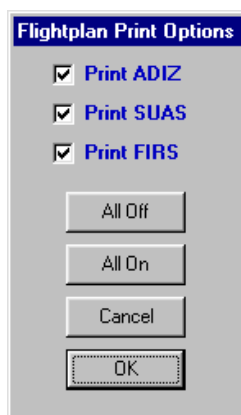


Figure 13. Flightplan Print Options Dialog

## 4.1.1.6 OPARSWEB

### AERODB DOWNLOAD

Opens an internal Web browser and links to the FNMOC OPARS Customer Databases page, shown in Figure 14.

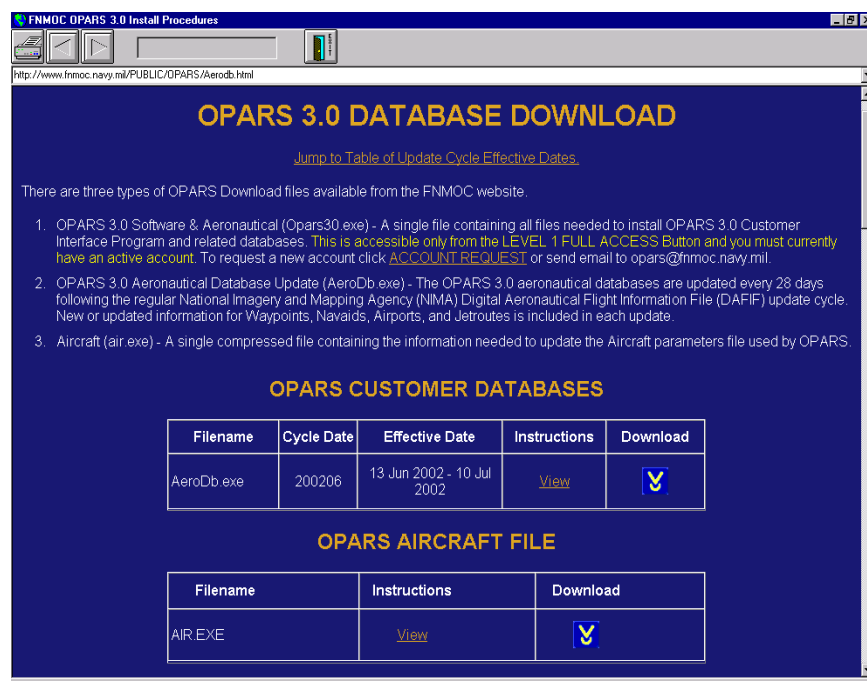


Figure 14. OparsWeb Internal Browser

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Users can view the online instructions for downloading and installing the OPARS updates or download the data files.

## AERODB (NMCI) DOWNLOAD

Opens a dialog and links to the FNMOC OPARS Customer Database as shown in Figure 15.

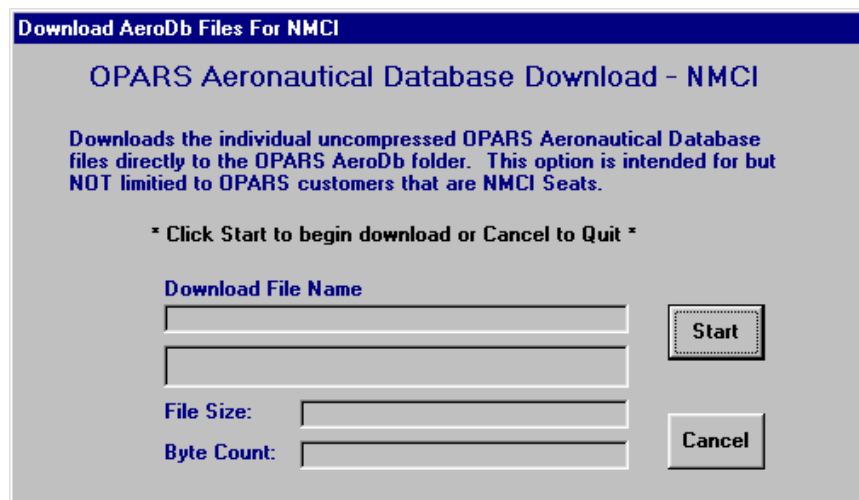


Figure 15. AeroDb (NMCI) Download Dialog

This option is intended for user with NMCI computers that cannot download executable files. The AeroDb (NMCI) Download will download the individual files needed to update the OPARS 3.1 Aeronautical database. Select **Start** to begin the download process.

## 4.1.1.7 HELP

### OPARS FAQ

Opens the OPARS internal browser and navigates to the OPARS Frequently Asked Questions page on the FNMOC Web server.

### OPARS USER MANUAL

Opens the OPARS internal browser and navigates to the online version of the OPARS User Manual on the FNMOC Web server.

### CONTACT US

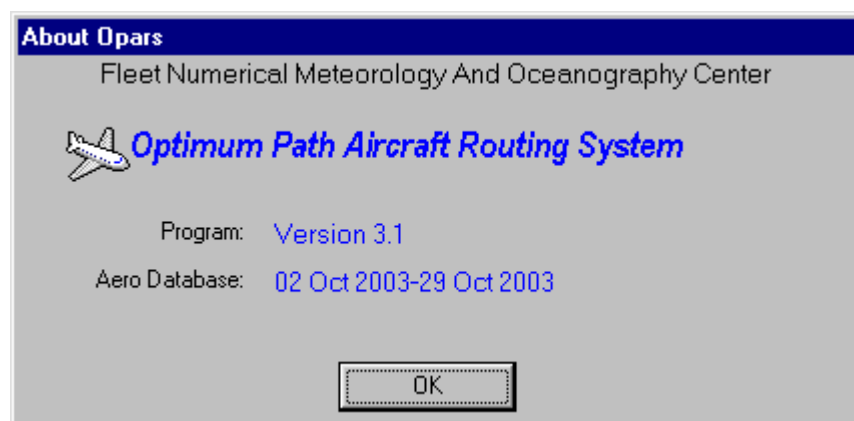
Opens the OPARS internal browser and navigates to the OPARS Contacts page on the FNMOC Web server.

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## SHOW VERSION

Provides the OPARS Client software program version number and the effective dates of the installed aeronautical database, as shown in Figure 16.



**Figure 16. Show Version Message**

## 4.1.2 ACCESS CONTROL

Access to OPARS is controlled by User ID and Password. OPARS accounts are normally issued to Department of Defense (DoD) or other U.S. Government agencies. There are three methods available to request an account: Facsimile, Letter, or Online.

### FAX OR LETTER

On official letterhead, send a fax or letter to:

Commanding Officer  
FLENUMMETOCCEN (Code 521)  
7 Grace Hopper Ave., STOP 1  
Monterey, CA 93943-5501

Fax number: (COM) 831-656-4313, (DSN) 878-4313

The fax or letter should contain the following:

- 1) Your Command name and mailing address
- 2) Point of contact: name, phone number, and e-mail address
- 3) Description of command's function and reason for request
- 4) Your Unit Identification Code (UIC)
- 5) Type of primary and secondary connection method you plan to use (for example, NIPRNET, SIPRNET, or INTERNET).

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## ONLINE

Use your Internet browser and open the online account request form at <https://www.fnmoc.navy.mil/PUBLIC/ADMIN/request.html>

**NOTE:** You must specify what type of OPARS account you require in the Comments section of the account request form. Your choices are OPARS, N-PFPS, or Both. Also, indicate your aircraft type (like, F/A-18, F-16, KC-135). Contractors should also provide contract name, number, contracting officer, and the contracting officer's telephone number, either commercial or DSN.

Fill out the form completely and click **Submit**.

Within a few days of the request, your assigned username/password and related documents will be emailed to you. Using the username/password, you can download the OPARS 3.1 software from the FNMOC Web site. Your username/password will also allow you to download data for use with OPARS, access the FNMOC Level 1 or 2 website for JMV Thumbnails, or connect with the FNMOC METCAST Server for downloading data via METCAST Client. If you have any questions, please contact the OPARS account administrator at (DSN) 878-4538, (COM) 831-656-4538 or send an e-mail to [opars@fnmoc.navy.mil](mailto:opars@fnmoc.navy.mil).

### 4.1.3 INSTALLATION AND SETUP

The procedure for installing OPARS 3.1 is described in Appendix G.3 OPARS 3.1 INSTALLATION PROCEDURE on page 188.

## 4.2 INITIATING A SESSION



To initiate an OPARS session, double-click the OPARS icon on the desktop. Another method is to click the **Start** button, point to **Programs**, then to **OPARS Version 3.1**, and click **OPARS Version 3.1**.

## 4.3 STOPPING AND SUSPENDING WORK

Work on a flight plan request may be stopped at any time by clicking **Cancel** as many times as needed to get back to the Request Editor dialog and then clicking **Exit**.

To suspend work and save the current flight plan request, click **Cancel** as many times as needed to return to the Request Editor and then click **Save**. The flight plan request is then available the next time an OPARS session is initiated.

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## 5. CONFIGURING OPARS

Default values for many OPARS parameters are set by using the **Config** menu. The four menu choices used for setting defaults are: **Communications**, **Request Defaults**, **Flight Plan Graphics**, and **Flightplan Printing**. Figure 17 shows the **Config** menu. Once set, OPARS will automatically use these settings for each new flight plan.

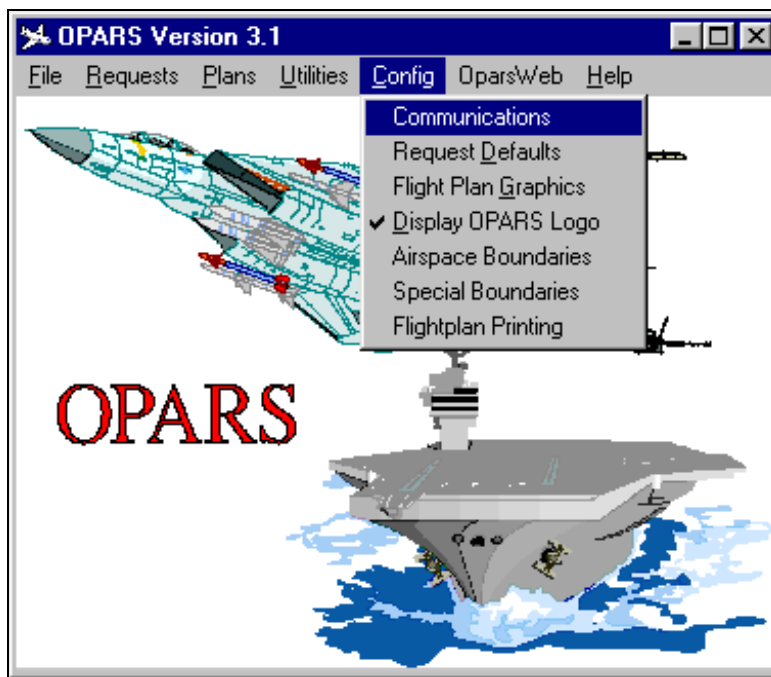


Figure 17. OPARS Config Menu

### 5.1 COMMUNICATIONS

On the **Config** menu, click **Communications**. The parameters shown in Figure 18 enable your OPARS Client program to communicate with the FNMOC server. You may also set personal preferences for the degree of interaction required when a flight plan request is submitted and for the output format of the returned flight plan.

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**Communications Setup**

**Server Universal Resource Locator**

Server URL:

Metcast Server URL:

**OPARS Account Information**

User Name:

User Password:

**Output Controls**

☒ Use NFP Format

☐ Use CRD Format

**Request Controls**

☒ Automatically Send request

☒ Automatically Close Dialog

☒ Automatically Display Flightplan

**Proxy Server Information**

☐ Use Proxy Server

Proxy URL:

Port:

User Name:

Password:

**Proxy Type**

☐ CERN Proxy

☒ TUNNEL Proxy

OK Cancel

Figure 18. Communications Setup Dialog

## 5.1.1 SERVER URL

The OPARS Server URL is set to a default value during OPARS installation.

## 5.1.2 METCAST SERVER URL

The FNMOC Metcast Server URL is set to a default value during OPARS installation.

## 5.1.3 OPARS ACCOUNT INFORMATION

Enter your OPARS User Name and User Password.

## 5.1.4 REQUEST CONTROLS

- Check Automatically Send Request to have the OPARS Client automatically submit the flight plan request when the OPARS Request Module dialog is displayed (see Figure 19).

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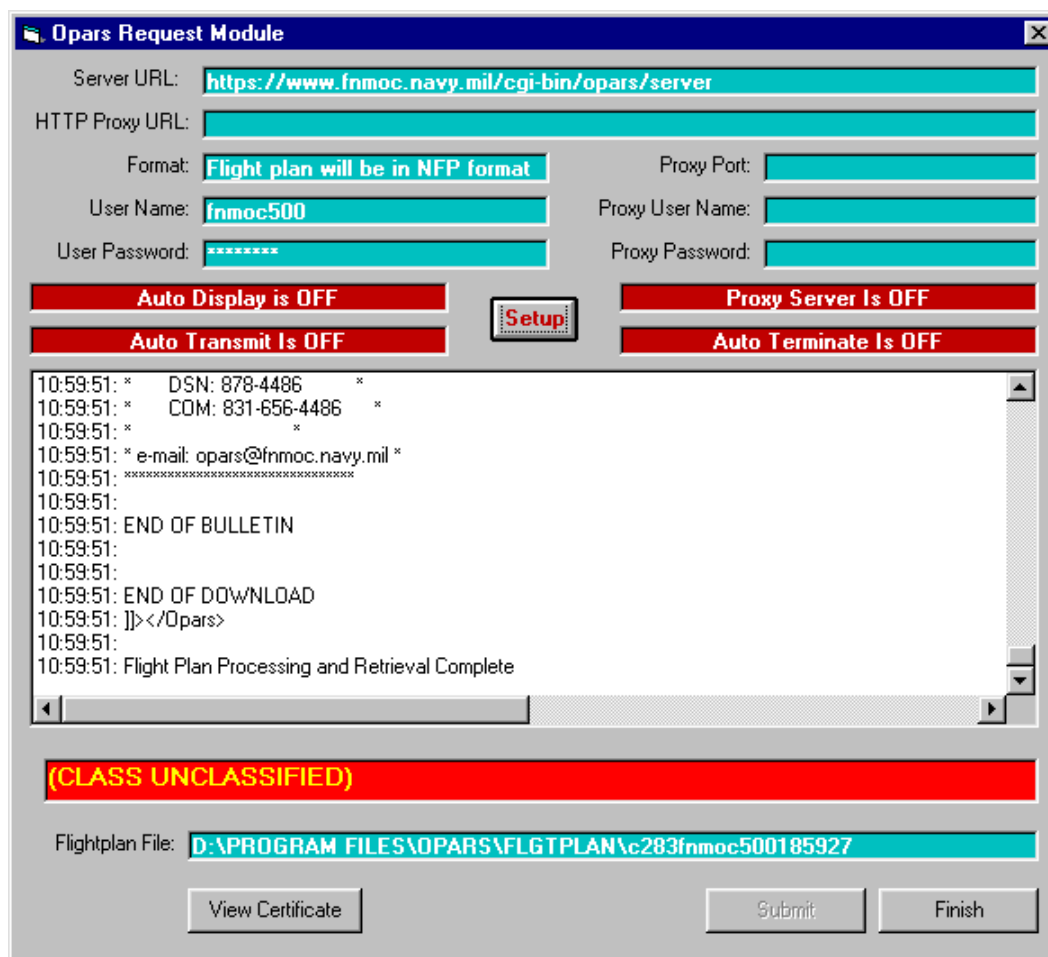


Figure 19. OPARS Request Module Dialog

- Check Automatically Close Dialog to close the OPARS Request Module dialog when the flight plan request processing is complete.
- Check Automatically Display Flightplan to have the OPARS Client automatically display the completed flight plan.

## 5.1.5 OUTPUT CONTROLS

Click Use CRD Format to have completed flight plans returned in the Common Route Definition format used by the N-PFPS. Click Use NFP Format for the Normal Flight Plan form.

## 5.1.6 TIMEOUT INTERVAL

The timeout interval setting allows the OPARS Client to recover from https connection interruptions. Sometimes on very long or complicated legs, the https connection to the FNMOC server is dropped due to lack of activity. In most cases, the flight plan request was

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received and processing continued after the connection was dropped. After completion, the flight plan is available for retrieval from the FNMOC server.

If the timeout interval is set and the processing time exceeds the set limit, OPARS will prompt the user to reestablish connectivity by using the Retrieve function as shown in Figure 20. The default timeout interval is 300 seconds (5 min.) per leg. If you do not want OPARS to timeout, check the Disable Timeout option in the Communications Setup dialog (see Figure 18).

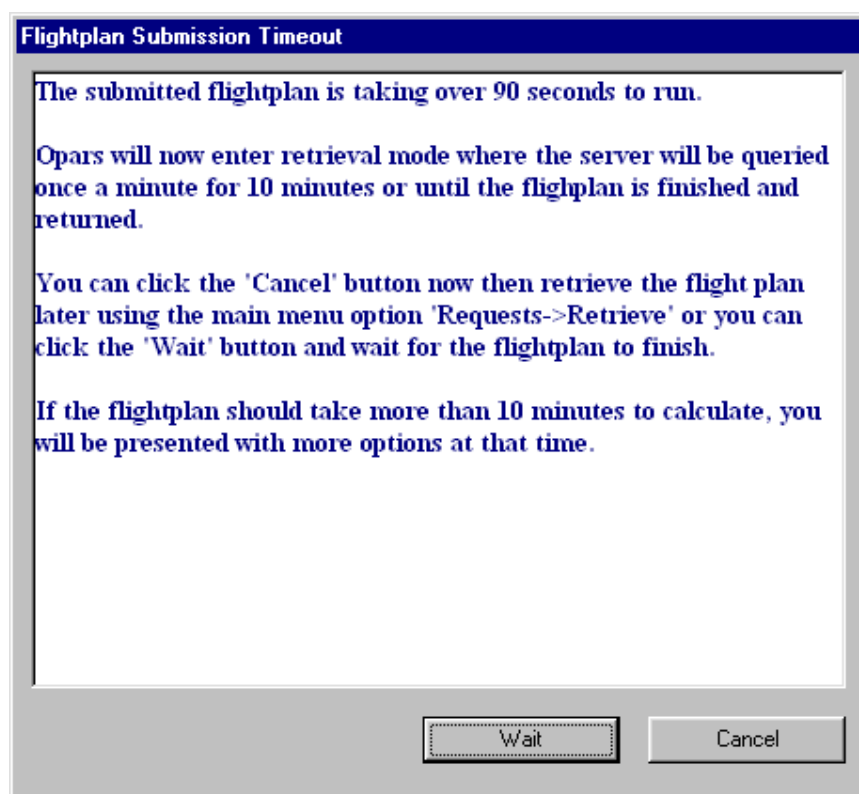


Figure 20. Flightplan Submission Timeout Prompt

## 5.1.7 PROXY SERVER INFORMATION

If you must use a proxy server to access the FNMOC OPARS Server, check the Use Proxy Server option and complete the necessary entries.

## 5.2 REQUEST DEFAULTS

On the **Config** menu, click **Request Defaults**. The parameters shown in Figure 21 are unique to your command and should be set before submitting a flight plan request. Click **OK** when finished to save the default settings.

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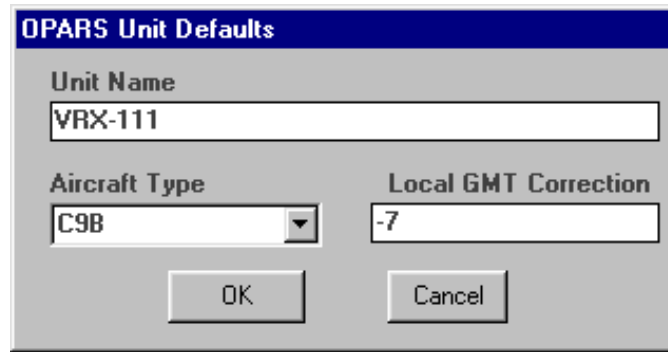


Figure 21. OPARS Unit Defaults Dialog

## 5.2.1 UNIT NAME

In the **Unit Name** box, type the desired unit name (up to 30 characters). This name will be displayed on each flight plan request.

## 5.2.2 AIRCRAFT TYPE

In the **Aircraft Type** box, select an aircraft type from the list or type the entry. OPARS will use this as the default aircraft type when creating new flight plans. If your unit uses more than one aircraft type, select the type used most often. The type can be changed in the flight plan request.

## 5.2.3 LOCAL GMT CORRECTION

In the **Local GMT Correction** box, type the time zone conversion value relative to GMT. For example, west of Greenwich are negative numbers and east of Greenwich are positive numbers – Monterey, CA would be -8 for Pacific Standard Time, Military Time Zone Uniform. This setting is used to convert GMT to local system clock time and vice versa. The information available at the following URL will help you find the world time zone for your location, <http://greenwichmeantime.com/info/timezone.htm>

**CAUTION:** If your computer system clock is changed for Daylight Savings Time or is reset to Standard Time, the Local GMT Correction must also be changed to reflect the correct offset from GMT.

## 5.3 FLIGHT PLAN GRAPHICS

On the **Config** menu, click **Flight Plan Graphics**. As shown in Figure 22, the Flight Plan Display Color Selections dialog provides options to modify the color and size of elements in the flight plan display. These settings will be saved as the defaults for each OPARS session. Colors, font size, wind barb length, and barb spacing can be set. You can save a custom palette by changing the desired settings and then clicking **SaveAs...** This will save the

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palette with a name of your choice. This custom palette will now be available on the Displayed Palette and Screen Palette lists. When finished making changes, click **O.K.**

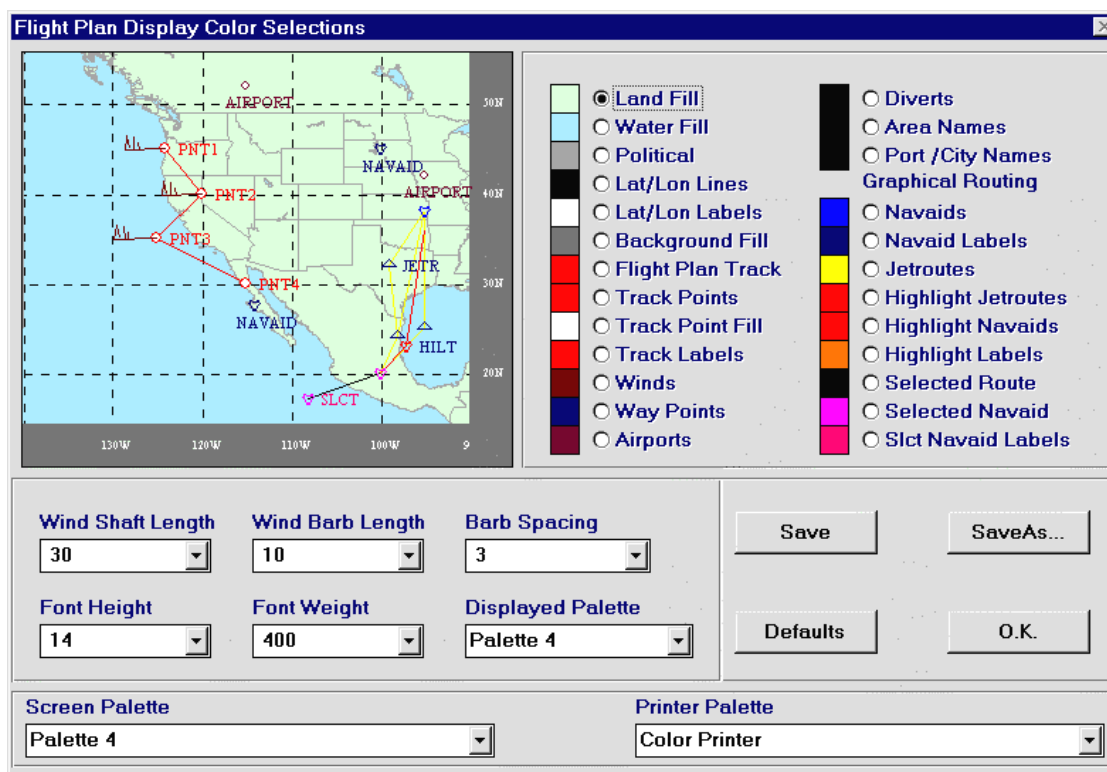


Figure 22. Flight Plan Display Color Selections

## 5.3.1 CHANGING COLORS

Each of the twenty-five elements displayed on the flight plan map can have a custom color assigned to it. To change the color of an element, click the associated option button to display a color palette. Select the desired color or create a custom color and then click **O.K.** Each element can be changed using this method. The example flight plan will reflect the current color settings as your changes are submitted.

Another way to change the colors is to select one of the preset color palettes using the **Displayed Palette** list.

## 5.3.2 CHANGING FONTS AND WIND BARBS

Font and wind barb characteristics may be changed by selecting the desired values from the appropriate lists. Changes will be reflected on the example flight plan.

To make the changes permanent, click **Save**. If you want to restore the default settings, click **Defaults**. When finished, click **O.K.**

## 6. GETTING STARTED WITH OPARS

### 6.1 HOW TO BUILD A FLIGHT PLAN REQUEST

The following paragraphs describe how to build a standard flight plan request relying on the default values within OPARS. Start the OPARS application. From the OPARS File menu, click **New**.

The OPARS Request Editor dialog will be displayed, as shown in Figure 23.

#### 6.1.1 OPARS REQUEST EDITOR (GENERAL)

**OPARS Request Editor(General)**

**Pilot's Name**  
LT R.W. Smith

**Unit Name**  
VRX-111

**Aircraft Call Sign**  
Snow Slide 10

**Current Date and Time**  
08/12/2002 15:47:27

**Number Of Legs**

- ☐ 1 Standard Leg
- ☐ 2 Standard Legs
- ☒ 3 Standard Legs
- ☐ 4 Standard Legs
- ☐ 5 Standard Legs
- ☐ 6 Standard Legs
- ☐ 2 Standard, 1 Mission

**Settings...** **Save**

**Submit** **Exit**

**Flightplan Classification**

- ☒ Unclassified
- ☐ Confidential
- ☐ Secret

**Help**

LEG SELECTION is a mandatory entry. Select the number of legs (the number of POD/POA pairs, the number of takeoffs and landings) for your flight by clicking on the appropriate item.

Example:  
For a flight from North Island to Whidbey Island, then

Figure 23. OPARS Request Editor (General)

The OPARS Request Editor (General) dialog is used to provide general parameters that will apply to the whole flight plan request and are not leg specific.

a. **Pilot's Name**

Type in the aircraft commander or pilot's name.

**Note:** The **HELP** box at the bottom of the dialog is context sensitive and provides amplifying information about each entry item.

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b. [Unit Name](#)

The default value for the Unit Name will be displayed in this text box. The Unit Name may be changed by typing a new value.

c. [Aircraft Call Sign](#)

Type in the aircraft call sign to be used during the flight.

d. [Current Date and Time](#)

The displayed date and time is derived from the system clock on your computer. Check this date to ensure it is accurate because it will be used to compute a default Time of Departure or Time of Arrival using the GMT correction that was set in Unit Defaults.

e. [Number of Legs](#)

Click the appropriate number of standard legs for the flight plan request. The default value is 1 Standard Leg.

f. [Help](#)

The Help screen displays amplifying text in the bottom portion of the dialog. Use the vertical scroll bar to scroll the text. Click the Up Arrow to enlarge the Help screen to see all the text. Click the Down Arrow to restore the Help display to normal size.

g. [Flightplan Classification](#)

Select the appropriate classification level for the flight plan. Selection of a classification other than Unclassified will display the Handling/Declassification Instructions dialog as shown in Figure 24. NO FOREIGN and X4 are the default selections. If no special handling instructions are required, select **Special – Enter below** and type a space in the comment field.

**HANDLING/DECLASSIFICATION INSTRUCTIONS**

Please indicate handling instruction on the left and declassification instructions on the right

Handling	Declassification
<input type="radio"/> NODIS	<input type="radio"/> X4 US military plans or national security emergency preparedness plans.
<input type="radio"/> LIMDIS	<input type="radio"/> X6 Information that would damage relations between the US and a foreign government, reveal a confidential source, or seriously undermine diplomatic activities
<input checked="" type="radio"/> NO FOREIGN	<input type="radio"/> X8 Information that would violate a statute, treaty, or international agreement
<input type="radio"/> SPECAT	<input checked="" type="radio"/> Declassify on (YYYYMMDD):
<input type="radio"/> SOSUS	<input type="text" value="20090822"/>
<input type="radio"/> Special -- Enter below	

OK Cancel

Figure 24. Handling/Declassification Instructions

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Click **OK** when the Handling and Declassification Instructions are completed.

Once you have filled out all the items on the General dialog, one of three options must be selected:

1. Click **Settings...** to continue building the flight plan request. On selection, the OPARS Request Editor (Leg) dialog will be displayed for Leg #1, as shown in Figure 25.
2. Click **Save** to save only the General information. This is useful if you want to stop the flight plan request process, but continue it later. If selected, a message will report that the "Required Information for Routing has not been entered for Leg # 1." Click **OK** to continue and save the request or click **Cancel** to quit the OPARS Request Editor and not save the partial request.

**Note:** **Submit** is not a viable option at this point because all flight plan request parameters have not been entered.

3. Click **Exit** to cancel any input you may have made and return to the main OPARS menu.

## 6.1.2 OPARS REQUEST EDITOR (LEG)

This is the primary dialog for setting the parameters for each leg of your flight plan request. Notice the line "Editing Standard Leg #1 of 2" under the title bar in Figure 25.

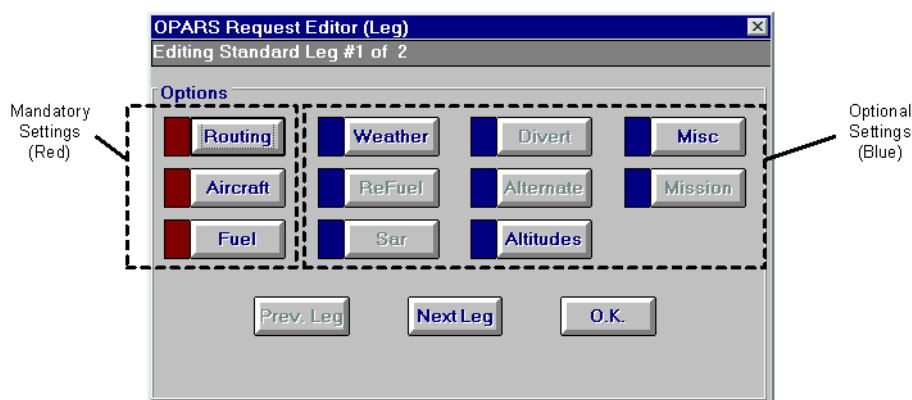


Figure 25. OPARS Request Editor (Leg)

This line indicates which leg of the flight plan request is being edited. There are eleven parameter buttons and three action buttons in the dialog. Parameter buttons that do not apply to the current flight plan request will not be available.

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Figure 26. Settings Legend for OPARS Request Editor (Leg)

Notice that some buttons are color-coded red, while others are color-coded blue. The red color indicates the option has mandatory settings that must be entered. The blue color indicates an option whose settings are optional for the flight plan request. When all mandatory items in an Options area have been entered the color-code will change to green. Messages are displayed when mandatory information for a flight leg has been left out.

**Note:** The parameter buttons in the OPARS Request Editor (Leg) can be selected in any order.

## 6.1.3 OPARS REQUEST EDITOR (POD/POA)

Selecting **Routing** will display the OPARS Request Editor (POD/POA) dialog as shown in Figure 27.

The image shows the 'OPARS Request Editor (POD/POA) Leg #1 Of 1' dialog box. It is divided into several sections. The 'Point of Departure' section has buttons for 'Airport...', 'Lat/Lon...', 'Navaid...', and 'Rng/Brng...', with 'DENVER INTL' entered in the 'Airport' field. The 'Point of Arrival' section has similar buttons and 'LAMBERT ST LOUIS INTL' entered in the 'Airport' field. The 'Route Input Options' section has buttons for 'Manual...', 'Graphical...', and 'Canned...'. The 'Flight Date And Time(GMT)' section has radio buttons for 'Departure' (selected), 'Arrival', and 'No Time On This Leg', with fields for 'GMT Date (mm/dd/yyyy)' and 'GMT Time (hhmm)'. The 'Time On Ground' section has fields for 'Hours' and 'Minutes'. The 'Routing' section has a text box and a 'Save As Canned Route' button. The 'Help' section at the bottom contains a scrollable text area with instructions: 'ROUTE INPUT OPTIONS - Routing for your flight may be entered by any of three methods, MANUAL, GRAPHICAL or CANNED. Routing is always entered in pairs of information. Each pair consists of a ROUTE and a WAYPOINT.'

Figure 27. OPARS Request Editor (POD/POA)

# OPARS USER MANUAL

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This dialog has five areas for request items: Point of Departure, Point of Arrival, Route Input Options, Flight Date and Time, and Time on Ground. Each entry is described below:

a. **Point of Departure (POD)**

The POD for this leg may be expressed as one of four types – Airport, Lat/Lon, Navaid, or Rng/Brng. Click the button for the type wanted. Selecting Airport will allow you to type in the airport name or select from a list of Airport names. Lat/Lon requires entering degrees, minutes, tenths of minutes, and hemisphere indicator. Navaid allows you to type in the identifier or select from a list of Navaids. Range/Bearing requires a Navaid identifier and range and bearing values.

b. **Point of Arrival (POA)**

The POA is the same type of entry as the POD. It has the same selections and the same secondary dialogs.

c. **Route Input Options**

Choosing the correct routing for a flight plan request can be the most complicated part of the request. The routing options include – Direct, Jet Routes Only, On/Off Jet Routes, Rhumb Line, North Atlantic, and Optimize by latitude/longitude (see Appendix C for more information on the OPARS Routing Options). Routing may be entered manually or graphically. In the graphic mode, possible routes, airports, and Navaids are displayed and each flight leg is built dynamically. There is a limit of 100 routing/Navaid pairs. Also, frequently used routes can be saved as Canned Routes and reused.

1) **Manual...**

The preferred method for simple routing is Manual (such as, letting the OPARS select the route by using \$J from the POD to the POA), or when a specific route is desired (see Figure 28).

# OPARS USER MANUAL

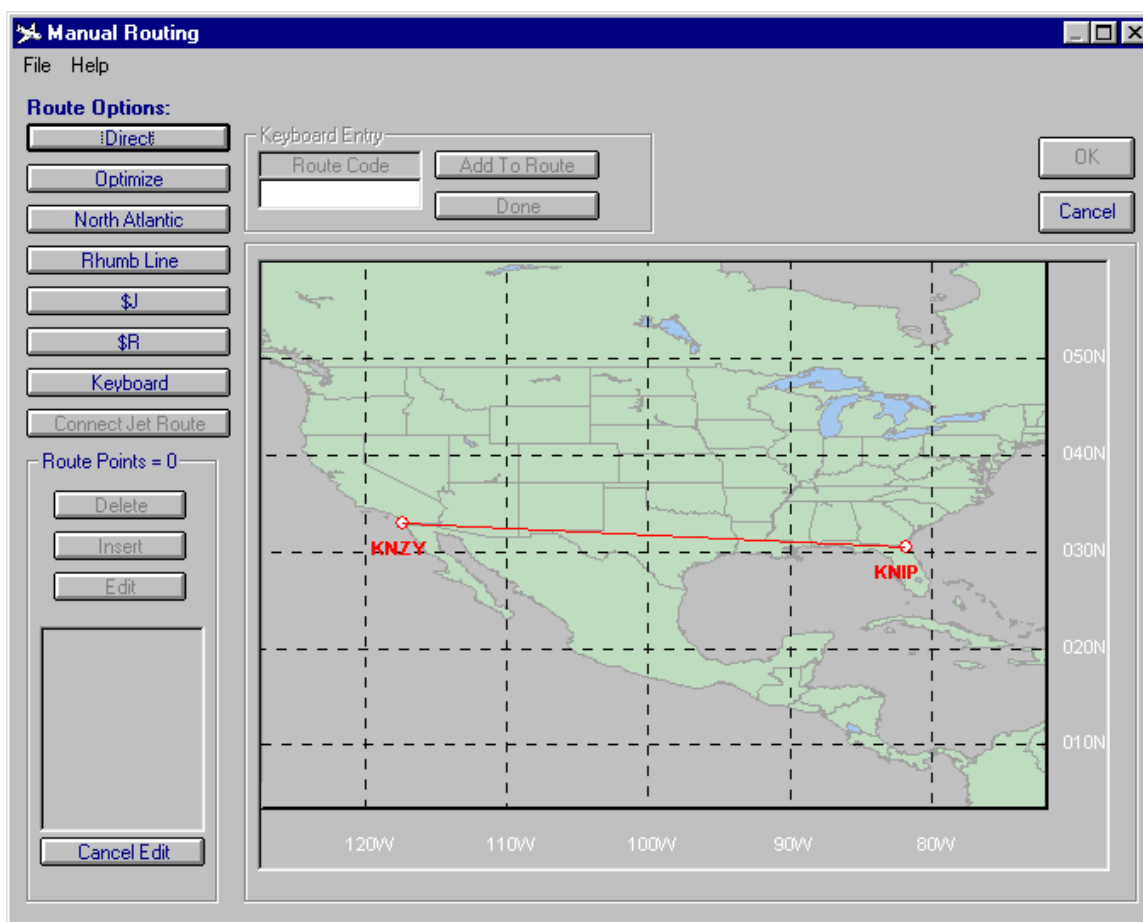


Figure 28. OPARS Manual Routing Display

Manual routing for each leg is accomplished in segments, going from POD to the first route point, then to the next route point, and so on until the POA is reached. The segments are displayed on the Manual Routing dialog as they are created. Each segment is constructed by picking a routing option to be used for the segment and then specifying if the segment termination point will be a Waypoint, Jet Route, Range/Bearing from a Navaid, or a Latitude/Longitude coordinate. There is also an option to quickly indicate to use the routing option all the way to the POA.

In the **Route Options:** dialog area, click the desired routing type<sup>1</sup> button for the first segment of your flight leg. This will activate the **To** area, click the desired termination point for the flight segment.

**NOTE:** A fast method of finding a particular Navaid is to change the Waypoint Selection method to Use Data Base Search and type the first few letters of the Navaid identifier in the Search box. The incremental search feature will automatically scroll the Navaids in the Selections list to the first Navaid matching your entry in the Search String box.

<sup>1</sup> Routing types are described in Appendix C.

# OPARS USER MANUAL

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After a Navaid is selected, only one of the generic routings (that is, Direct, \$J, etc.) or a specified Jet Route that passes through that Navaid can be selected. Click **Plot Leg** to display a graphic of the current routing selections.

As routing and Navaid entries are made, they are displayed as a list in the **Route Points** box. If desired, routing option and Navaid couplets can be typed directly into the **Keyboard Entry Route Code** box and then click **Add to Route** to add the couplet to the **Route Points** list. When finished typing in route points, click **OK**. The input process will be terminated when POA is selected as the next Navaid and the last entry in the **Route Points** box will show **ENDROUTE**. *You do not have to type ENDROUTE, it is entered automatically.*

If a routing mistake is made, click **Delete Last Point** on the **Edit** menu to delete the previous segment of the flight leg.

Examples:

(a) Route Direct (great circle) from POD to POA

Click **Direct to POA**

Click **OK**

(b) Route Jet Routes only from POD to POA

Click **\$J**

Click **To Poa** in the **To** area.

Click **OK**

(c) Route On/Off Jet Routes (\$R), Optimize, North Atlantic, or Rhumb Line to POA

Same process as Jet Routes above, except click the appropriate Route button.

(d) Specify routing

Each flight leg segment will be specified by first selecting the routing option and then selecting the termination point for that segment. Navaid, Jet Route, Range/Bearing, and Latitude/Longitude will each display an additional dialog to assist in specifying the termination point (see Figure 29 for an example of the Navaid Point of Departure dialog). In most cases, the final segment of each leg will be a **Direct to POA** routing designated by a D, **ENDROUTE** notation.

# OPARS USER MANUAL

WayPoints		
INW	VORTAC	WINSLOW
INW02	INTERSECTION	(INW 278/C
INW38	INTERSECTION	(INW 106/C
INWAM	INTERSECTION	INWAM
INWOD	INTERSECTION	INWOD
INY	NDB	INDEPENDEN
INY04	INTERSECTION	(LYY 256/C
INY64	INTERSECTION	(INY 078/C
INVOE	INTERSECTION	INVOE
INZAT	INTERSECTION	(INZAT)
IO	NDB	ANTANANARI
IOA	NDB	YIANNENA
IOB	NDB	MOUNT STEP
IOCOE	INTERSECTION	IOCOE
IODAD	INTERSECTION	IODAD
IOE08	INTERSECTION	(IOE 080/C
IOE77	INTERSECTION	(IOE 080/C
IOE97	INTERSECTION	(IOE 080/C
IOF	NDB	FLOTTA
IOKEA	INTERSECTION	IOKEA
IOM	VOR-DME	ISLE OF MA
IOM	NDB	MC CALL
IONTA	INTERSECTION	IONTA (ATE

Figure 29. Navaid Selection Dialog

## 2) Graphical...

This method is slower than the Manual method, but offers the advantage of viewing the available Jet Routes and Nav aids. The screen consists of two maps, a Select Route box, and two command buttons. The large map on the left is the Working Map, and the smaller map on the right is the Overview Map. Figure 30 shows the graphic display for a route with a POD of KNGU (Norfolk NS) and a POA of KNZY (North Island NAS).

# OPARS USER MANUAL

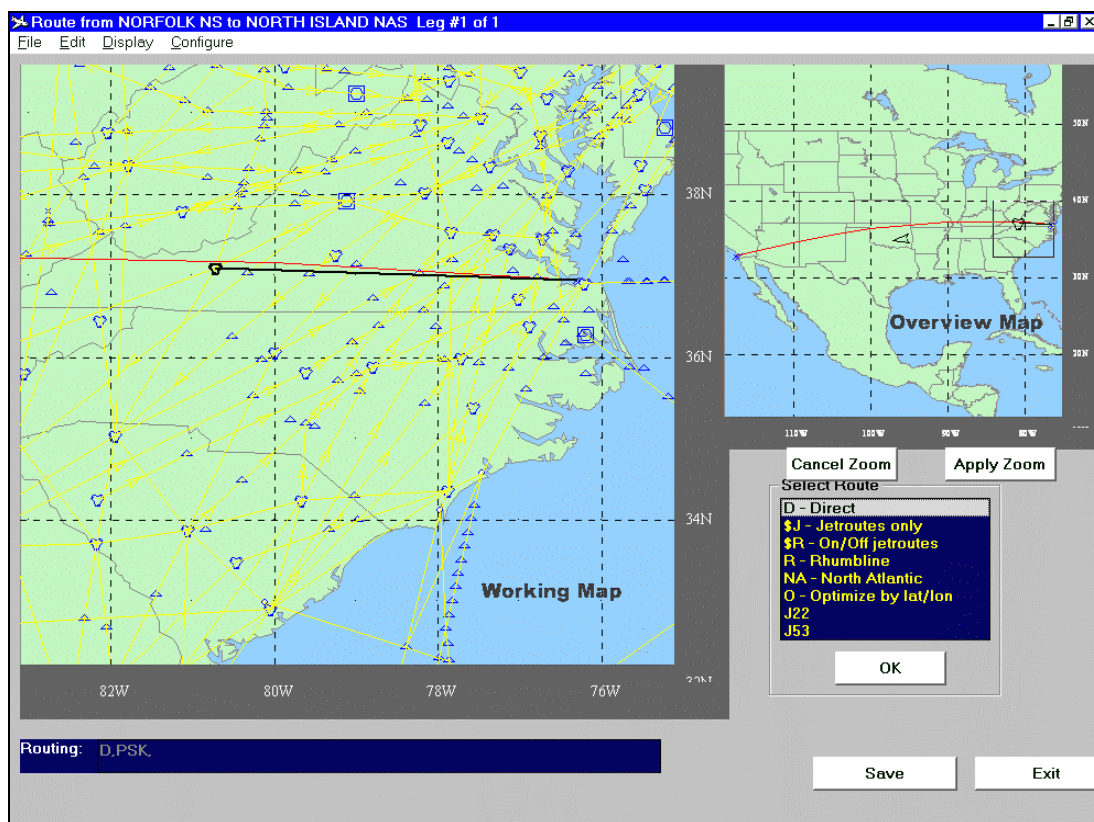


Figure 30. OPARS Overview Map

**Overview Map** - Displays the area from the POD to the POA with a great circle route between the two for a reference while building the route. The rectangle on the map shows the view area for the Working Map. As the route is built segment by segment, the Overview Map is refreshed showing each new segment.

**Working Map** - Displays all of the Jet Routes and Navaids within the area bounded by the rectangle on the overview map. As routing is selected, the map is repositioned on the last Navaid selected. You can change the area displayed in the Working Map by dragging the rectangle in the Overview Map to the desired position, then click **Apply Zoom**. Select the Route Option and click **OK**. Select a Navaid on the Working Map by clicking the desired Navaid. The Navaid nearest to the mouse pointer will have a circle over it, and the information about the Navaid is displayed in a box beneath the map on the right. As the route segment is entered, it is displayed on the Working Map along with the great circle line.

Route selection is made using the **Select Route** list. This list always contains the six generic routing types (Direct, \$J, etc.). If there are any Jet Routes that pass through the last Navaid selected, then the names of those Jet Routes are also displayed. By highlighting a Jet Route name, that Jet Route will be displayed on both the Working Map and the Overview Map. Select routing by either double-clicking on the route type or highlight the route type and click **OK**.

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Navaid selection is made by clicking the Navaid denoted by the circle. If a general routing type was selected, any Navaid on the map can be chosen. If a specific Jet Route (J5, W426, etc.) was selected, only Navaids on that Jet Route may be chosen. If the desired Navaid is beyond the boundary of the Working Map, then move the rectangle on the Overview Map to the desired area and click **Apply Zoom**.

The types of Navaids displayed on the Working Map may be designated using the **Waypoints** option on the **Configure** menu. This will display the Waypoint Display Options list as shown in Figure 31. Select the desired Navaids and whether or not to display the Navaid identification, then click **OK**.

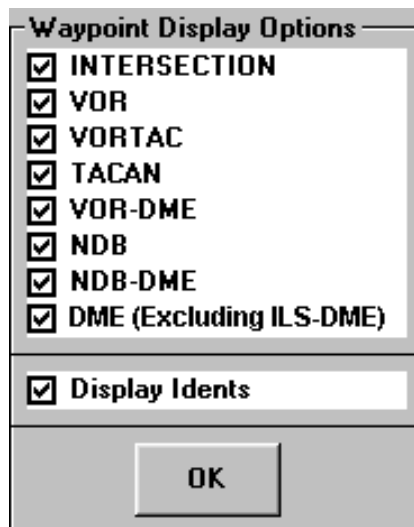


Figure 31. Waypoint Display Options from the Configure Menu

When all segments for the flight leg have been completed, click **Finish Routing**.

### 3) **Canned...**

This is the simplest method. Clicking **Canned** displays a list of canned routes that you have previously saved. The appropriate routes are determined by the following criteria:

- (a) No POD and POA have been entered.

All of the canned routes saved will be listed for selection. Selecting a canned route will populate the POD, the POA, and the routing entries.

- (b) Only the POD has been entered.

All of the canned routes saved that have a POD matching the one entered will be listed as options. Selecting one of the Canned Routes will populate the POA and routing entries.

# OPARS USER MANUAL

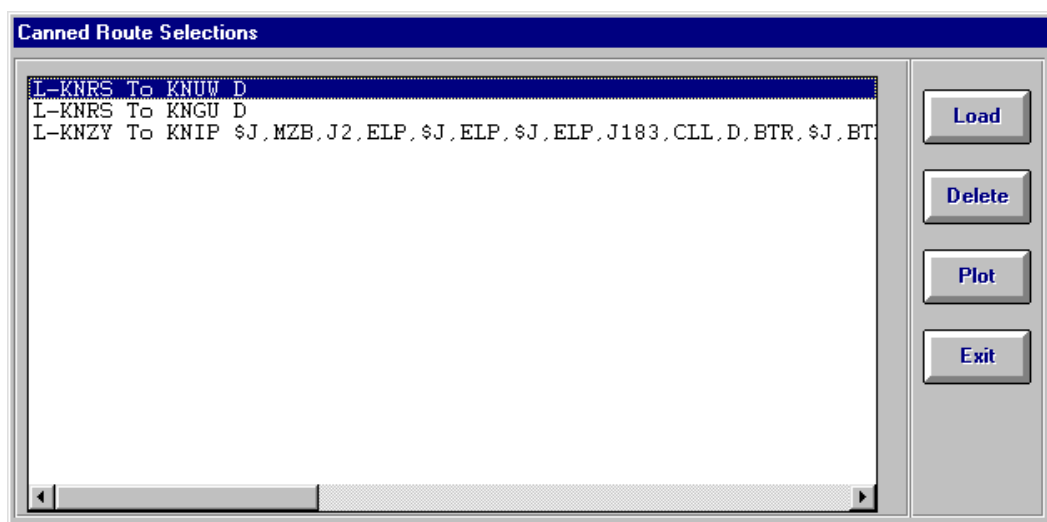


Figure 32. Canned Route Selections

(c) Only the POA has been entered.

All of the canned routes with the same POA will be listed for selection. Selecting a canned route will populate the POD and routing entries.

(d) Both POD and POA are entered.

All of the canned routes with the same POD and POA will be listed for selection. Selecting a canned route will populate the routing entries.

Clicking **Canned...** will display a screen similar to Figure 32. In this example, there is one Canned Route that has been saved. Notice that both the POD and POA have been specified. To use this route, the flight plan request that is being built must have the same POD and POA.

To use this canned route, select the desired canned route and then click one of the buttons to the right of the list. These commands include:

**Load** .....Reads this canned route as the actual routing line for this flight plan request.

**Delete** ...Deletes this canned route from your list of canned routes.

**Plot** .....Will draw the canned route on a display for viewing.

**Exit** .....Closes the **Canned Route Selections From To** dialog.

## d. **Flight Date And Time (GMT)**

The options in this section allow you to select **Time of Departure**, **Time of Arrival**, or **No Time On This Leg**. The Date and Time have default values. To change to Time of Arrival, click **Arrival**. To change the **GMT Date**, type or select the desired date. To change the **GMT Time**, type or select the desired time. The **No Time On**

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**This Leg** option is used on multi-leg flight plans when you want OPARS to calculate the Arrival and Departure times based on the settings for the other legs.

e. **Time On Ground**

This selection is only available for multi-leg flight plan requests. It represents the time on the ground between standard legs. Type the hours and minutes of ground time in the appropriate boxes.

f. **Save As Canned Route**

When the routing for a flight leg is complete it can be saved as a Canned Route for reuse in future flight plan requests. Click **Save As Canned Route** to save the routing settings.

g. **Help**

The context sensitive Help area will display amplifying information about the focus area of the OPARS Request Editor (POD/POA). It is a good place to read about the options available for each area.

Click **O.K.** when you have finished making all your routing selections. This will return you to the **OPARS Request Editor (Leg)** dialog, as shown in Figure 25 on page 30. You can now choose the **Aircraft** or the **Fuel** button to continue building your flight plan request. For the purposes of this example, click **Aircraft**.

## 6.1.4 OPARS REQUEST EDITOR (AIRCRAFT)

The OPARS Request Editor (Aircraft) dialog, as shown in Figure 33, contains the general parameters for the aircraft.

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OPARS Request Editor (Aircraft) Leg #1 Of 1

Aircraft Type: C9B

Operational Weight: 65000

Drag Count: 0

Climb: LONG RANGE

Cruise: MAXIMUM RANGE

Descent: FLIGHT IDLE

O.K. Options... Sperf... Cancel

Cargo Change Options

☒ Do Not Use  
☐ Cargo Change Entered  
☐ OPARS Calculate

Cargo Change

Help

AIRCRAFT TYPE is mandatory entry (is entered on the first leg only). Choose the appropriate aircraft from the list of supported aircraft. If your aircraft is not on the list, then select SPERF (Special Performance). You will be required to provide values for :

Time to Climb

Figure 33. OPARS Request Editor (Aircraft) Dialog

Initially, all entries in this dialog are automatically filled with default values for the aircraft type specified in the **Unit Defaults**. These values may be changed if desired.

a. **Aircraft Type**

This is set to your **Unit Default** aircraft. To change aircraft type, select a different aircraft configuration from the available list. If the aircraft that you want is not in the list, you may select the Sperf (Special Performance) aircraft and specify its performance parameters. See page 42 for information on entering a Sperf aircraft.

b. **Operational Weight**

This default value represents the typical operational weight for the selected aircraft type. To change the value, type the desired value in the **Operational Weight** box and press **Enter**.

c. **Drag Count**

The drag count is set to the default value of the selected aircraft type. To change the drag count, type the desired value in the **Drag Count** box.

d. **Climb**

The climb configuration is set to the default value for the selected aircraft type. To change, select a different setting from the list.

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## e. **Cruise**

The cruise configuration is set to the default value for the selected aircraft type. To change, select a different configuration from the list.

## f. **Descent**

The descent configuration is the default value for the aircraft type that you have selected. To change, select a different descent setting from the list.

## g. **Cargo Change Options**

There are three options for the cargo change parameter. Click the desired option.

**Do Not Use** – There is no cargo or cargo change for this flight leg.

**Cargo Change Entered** – Enter the cargo change value (in lbs) in the **Cargo Change** box.

**OPARS Calculate** – The OPARS flight planner will calculate the cargo change to accommodate the fuel load.

## h. **O.K.**

Click **O.K.** when you have set all the parameters to the desired values. This will complete and close the Aircraft section and the display will return to the **OPARS Request Editor (Leg)** dialog.

## i. **Options...**

Allows two additional parameters to be added to your flight plan request – True Airspeed and Efficiency Factor. See Figure 34.

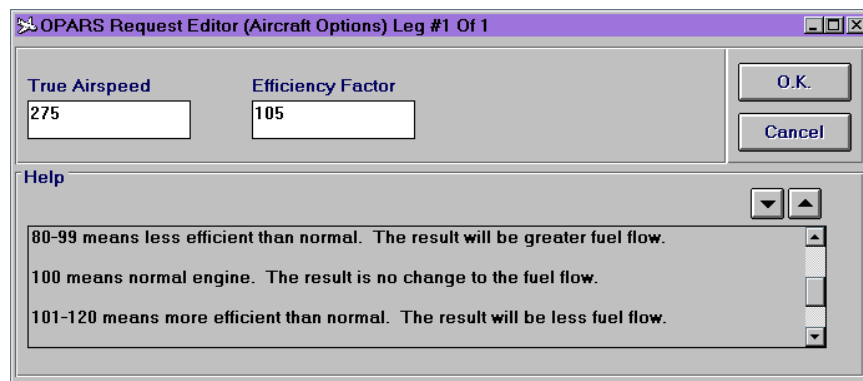


Figure 34. OPARS Request Editor (Aircraft Options)

**True Airspeed** – Used to specify a constant true airspeed cruise. Type the desired value in knots in the True Airspeed box.

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**Efficiency Factor** – A measure of engine performance expressed as a percentage. Many aircraft have known efficiency differences from the standard. Type the desired value in the Efficiency Factor box (for example, a 90% E.F. would be entered as 90).

Click **O.K.** when finished entering Aircraft Options. If no changes are required, click **Cancel**.

## j. **Sperf...**

This button is only available if an aircraft type of Sperf is selected. The Request Editor (Sperf) dialog as shown in Figure 35 will be displayed. All characteristics for the Special Performance aircraft must be typed into the appropriate text box. Click **O.K.** when finished. Detailed information about each parameter is provided in the Help area near the bottom of the dialog.

**Aircraft Name** – (text) Name of aircraft used as a reference in the flight plan (for example, C130Q).

**Climb Fuel** – (lbs) Fuel required to climb to specified Sperf Altitude.

**Sperf Bias** – (lbs) Amount of fuel used for engine start, taxi, run-up, and takeoff.

**Climb Time** – (min) Time required to climb to the specified Sperf Altitude.

**Cruise True Airspeed** – (kts) Cruise TAS for the specified Sperf Altitude.

**Sperf Altitude** – (ft) Single operating altitude used for flight plan calculation and determination of weather factors.

**Climb Distance** – (NM) Distance required to climb to the specified Sperf Altitude. This value may be adjusted by OPARS.

**Cruise Fuel Flow** – (lbs/hr) Fuel flow at specified Sperf Altitude.

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OPARS Request Editor (Sperf) Leg #1 Of 1

Aircraft Name	Climb Fuel	Sperf Bias
C130Q	600	300
Climb Time	Cruise True Airspeed	Sperf Altitude
12	275	27000
Climb Distance	Cruise Fuel Flow	
22	4200	

O.K. Cancel

**Help**

CRUISE FUEL FLOW is a mandatory entry for Special Performance (SPERF). It is entered as pounds per hour, and is used by the flight planner to calculate the fuel requirements for your flight. This fuel flow value should be for the altitude you specify in the SPERF ALTITUDE entry.

Example: CRUISE FUEL FLOW 4200

Figure 35. OPARS Request Editor (Sperf)

## 6.1.5 OPARS REQUEST EDITOR (FUEL)

Figure 36 shows the OPARS Request Editor (Fuel) dialog for setting the fuel options for a flight leg. Besides setting the fuel load or reserve values, you can also accept the Bias Options defaults or change the bias fuel settings for the flight leg.

OPARS Request Editor (Fuel) Leg #1 Of 1

**Fuel Options**

☐ Fuel Load  
☐ Fuel Maximum  
☐ Fuel Reserve  
☒ Calculate Fuel Reserve  
☐ 9KB

Calculate Reserve  
NATOPS Minimum Reserve

**Fuel Type**

JP-5

**9KB Hold Case**

☒ I-45 Min at 10,000 Ft  
☐ II-45 Min at 10,000(Alternate)  
☐ III-75 Min

**On-Ground Refuel Option**

☒ Yes  
☐ No

O.K. Cancel

**Bias Options**

Start, Taxi, Etc Bias: 1323 Ice Bias:

Departure Bias: Minutes After Takeoff:

Arrival Bias: Minutes Before Landing:

**Help**

FUEL OPTIONS is a mandatory entry. You may choose any one of the following:

1. Fuel Load - Enter the amount of fuel in pounds.
2. Fuel Maximum - The maximum amount of fuel in pounds will be loaded by the flight planner.

Figure 36. OPARS Request Editor (Fuel)

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## a. Fuel Options

The following options are available for a fuel entry:

- 1) **Fuel Load** – Click and type your fuel load (in lbs) in the **Fuel Load** box.
- 2) **Fuel Maximum** – Click to have OPARS default to the NATOPS maximum fuel load for the specified aircraft.
- 3) **Fuel Reserve** – Click and type your reserve fuel amount (in lbs) in the **Fuel Reserve** box.
- 4) **Calculate Fuel Reserve** – Click to have OPARS default to the NATOPS minimum reserve for the specified aircraft.
- 5) **9KB** – 9KB is only available for certain types of aircraft (that is, C-9B, DC-9, C-130T, C-40A, and C-20). This option is used for extended overwater flights (See Appendix F). If this option is selected, type your contingency fuel amount (in lbs) in the **9KB ContFuel** box. See the **Help** information on using this option.

## b. Fuel Type

A default value based on the OPARS aircraft database is automatically inserted. A different value may be selected from the list, if desired.

## c. 9KB Hold Case

This item is only available for valid aircraft with the 9KB option selected for the fuel option. **This Hold Case is mandatory for 9KB flights.**

## d. On-Ground Refuel Option

This item is available only for multi-leg flight plan requests. When available, it specifies if on-ground refueling will be used.

## e. Bias Options

The following parameters allow you to set bias amounts and bias times. Bias fuel is used to designate an amount of fuel for a particular function of the flight (taxi, takeoff, etc.). See Appendix D. OPARS DATA ELEMENTS for a full description of the Bias Options data elements.

### 1) Start, Taxi, Etc. Bias

Default value is automatically inserted for some aircraft in the performance database. Type the desired value (in lbs) into the text box.

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2) **Ice Bias**

Type the desired ice bias value (in lbs) into the text box.

3) **Departure Bias**

Type the desired departure bias value (in lbs) into the text box.

4) **Minutes After Takeoff**

Used in conjunction with Departure Bias. Type the amount of time (min) it takes to burn off the departure bias fuel into the text box.

5) **Arrival Bias**

Type the desired arrival bias value (in lbs) into the text box.

6) **Minutes After Landing**

Used in conjunction with arrival bias. Type the amount of time (min) it takes to burn off the arrival bias fuel into the text box.

Click **O.K.** when finished entering the fuel parameters. Focus will be returned to the **OPARS Request Editor (Leg)** dialog. You have now entered all the required parameters for a flight plan request. Click **O.K.** and OPARS will return focus to the **OPARS Request Editor (GENERAL)** screen.

Save the flight plan request. Click **Save** and this flight plan request will be saved in your **OPARS/Requests** folder with other saved requests. It will remain available until you delete it from your list.

After the flight plan has been saved, the display will return to the OPARS main screen (see Figure 23). Now the flight plan request can be submitted to Fleet Numerical for processing. The next section will describe how to submit a flight plan request.

## 6.2 HOW TO SUBMIT A FLIGHT PLAN REQUEST

Once a flight plan request has been built and saved, it is submitted to the OPARS Flight Planner running on one of the computers at Fleet Numerical. The **Requests** menu contains three options that can result in the flight plan request being submitted for processing – Preview, Submit, and Retrieve.

### 6.2.1 PREVIEW

**Preview** will display a listing all of the flight plan requests that have been built. Highlight the request that you want and click **O.K.** The **Preview** command will then display the complete flight plan request showing each data element and its associated value, as shown

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in Figure 37. To submit the flight plan request for processing, click **Submit** at the bottom of the screen. To exit the display without submitting the flight plan request, click **Cancel**. To print the flight plan request input to the default printer, click **Print**.

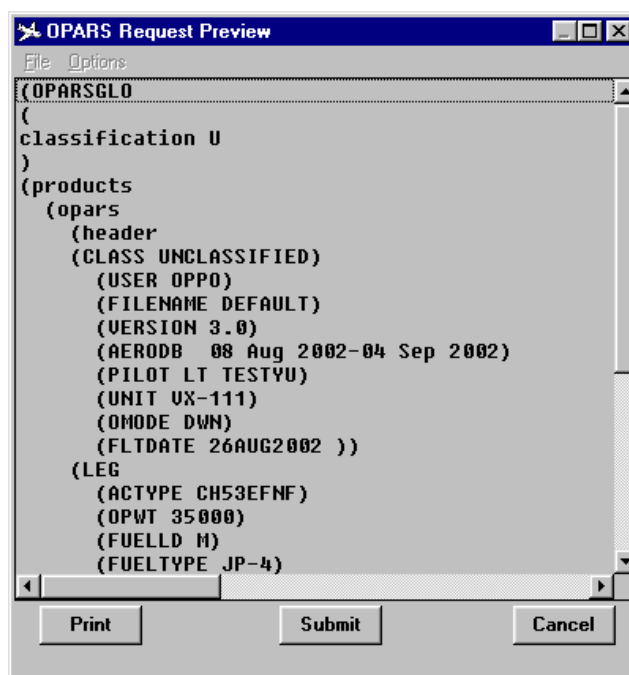


Figure 37. OPARS Preview of a Flight Plan Request

## 6.2.2 SUBMIT

Click **Submit** to display the OPARS Request Selection dialog. Select the desired flight plan request from the displayed list and click **O.K.** Or, click **Cancel** to return to the OPARS main menu.

## 6.2.3 RETRIEVE

Use this option to retrieve previously submitted flight plan requests. Click **Retrieve** to display a submenu to choose between CRD or NFP flight plan requests. Select the desired flight plan from the list and click **O.K.** to select it for processing. Click **Cancel** to exit the Retrieve command and return to the OPARS main menu.

After retrieving a flight plan request, the Opars Request Module dialog, as shown in Figure 38, will provide the status of the submission and the response.

**NOTE:** If the OPARS Request Module is set for manual submission, the user will have to click **Submit** to transmit the retrieved flight plan request for processing.

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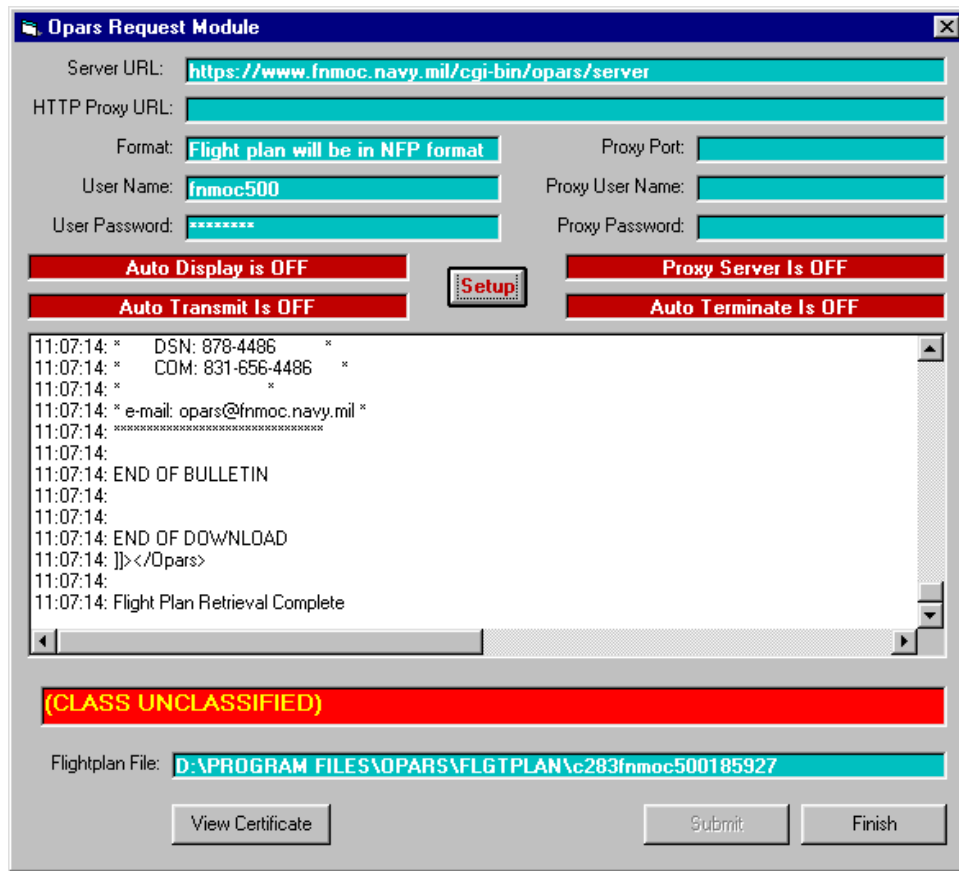


Figure 38. OPARS Request Module (Retrieve)

There is a **Finish** button in the lower right corner if you should decide to abort the OPARS Retrieve request.

The **OPARS Request Module** will perform the following steps:

1. Establish contact with the Fleet Numerical communication computer to log on and initiate an OPARS process.
2. Establish contact with the Fleet Numerical OPARS server to log on with your unique ID and Password.
3. Submit your flight plan request for processing.
4. Wait for OPARS to compute the flight plan. The completed plan will be downloaded or you will see a message indicating the problems encountered during the processing.
5. Log off the computer and break all the communications connections.
6. Return focus to the OPARS main screen.

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## 6.3 HOW TO DISPLAY AN OPARS FLIGHT PLAN

After the flight plan information is downloaded to your computer, there are several options available. To begin the display, on the menu bar, click **Plans** and then point to **Display**. There are two categories of Display options – text or graphics.

### 1) **Text**

If you chose this option, select from the list of the provided formats – Kneeboard1, Kneeboard2, Kneeboard3, Kneeboard4, Kneeboard5, Tactical, USAF-70, USAF-O77, Abbreviated, Kneeboard9, As Downloaded, MAC, CFP, PDA, or Overwater. The selected format will be displayed on the screen with an option to print a hardcopy. You can select **Display** and choose as many different formats for the same request as needed. See Figure 4. Formats Submenu for Plans Display and Appendix B. OUTPUT FORMAT DESCRIPTIONS for more information about display formats.

**Note:** Kneeboard 9 and Overwater output formats are only available for flight plans that requested the 9KB Fuel Option.

### 2) **Graphics**

The **OPARS Flight Plan Selection** dialog will show all flight plans that have been saved. Each available plan is represented by a line of information displaying the process identifier (from when it ran), date, aircraft type, POD, POA, and the Pilot's Name. Select the desired plan and click **O.K.**

The graphics display screen similar to Figure 39 will be displayed. The following example explains each of the menus and options in this section.

# OPARS USER MANUAL

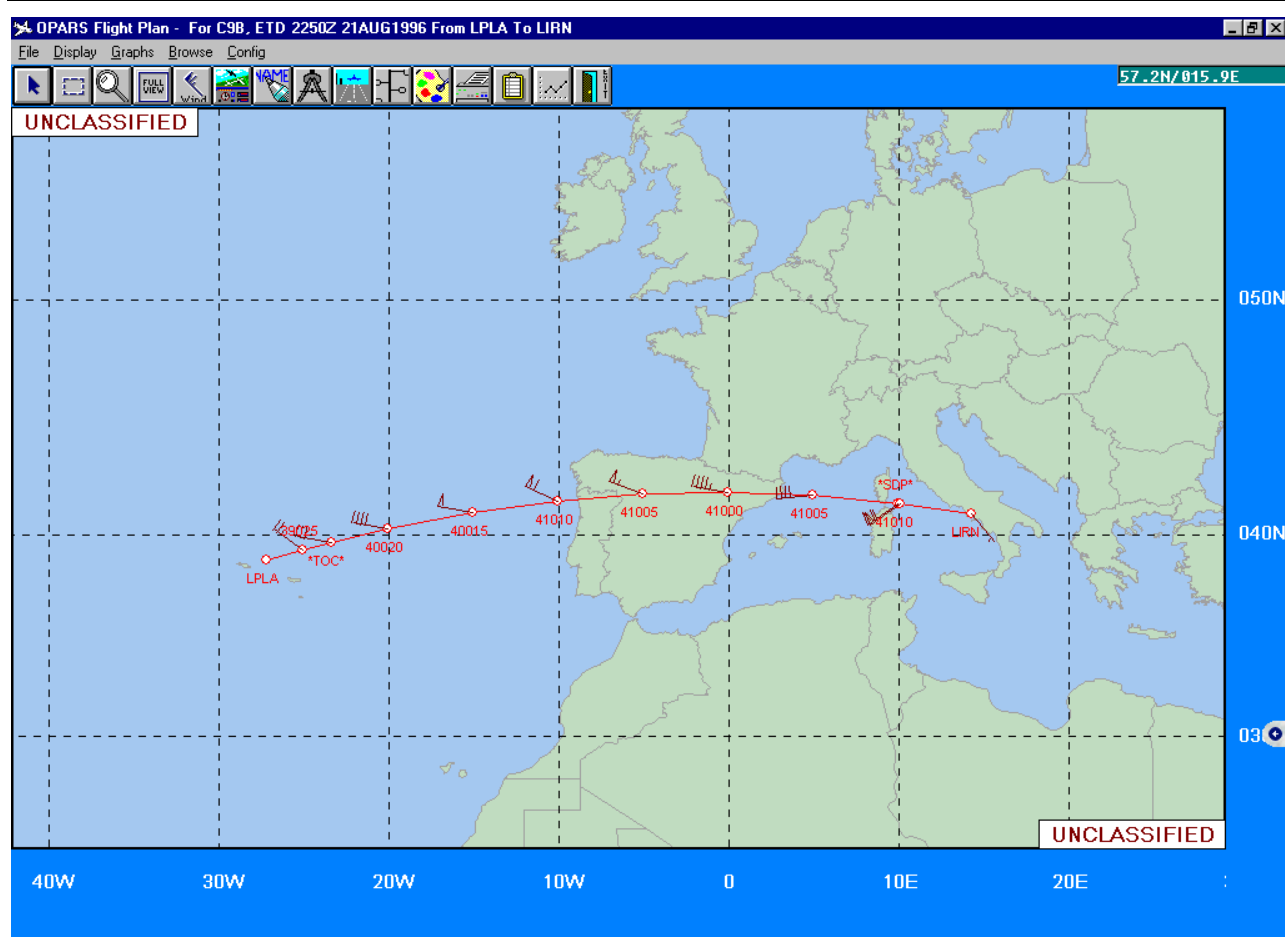


Figure 39. OPARS Graphics Flight Plan Display

## 6.3.1 EXPLANATION OF GRAPHICS DISPLAY

The Title Bar displays the general information about the Flight Plan. The menu bar has five menus – File, Display, Browse, Graphs, and Config. In addition, a Toolbar provides shortcuts to some of the menu commands. The menus are explained first.

### 6.3.1.1 FILE

#### OPEN

Opens the OPARS Request Selection dialog listing all saved flight plans. To proceed, highlight the desired plan and click **O.K.**

#### NEXT LEG

Displays the next leg of a multi-leg flight plan. This command is unavailable when the plan has only one flight leg.

# OPARS USER MANUAL

---

## DOWNLOAD SIGMET'S

Downloads current Significant Meteorology Information Bulletins (SIGMETs) from the FNMOC database. These can be displayed using the Display menu.

## DOWNLOAD METAR'S

Downloads current Aviation Routine Weather Reports (METARs) along flight path. These can be displayed using the Display menu.

## DOWNLOAD TAF'S

Downloads current Terminal Aerodrome Forecasts (TAFs) along flight path. These can be displayed using the Display menu.

## COPY TO CLIPBOARD

Saves the current screen in the clipboard area for use in other programs. For example, you can save the display screen in the clipboard and then paste it into a WordPerfect document.

## PRINT

Prints the currently displayed flight plan to the default printer.

## PRINTER SETUP

Contains the printer setup parameters, like printer orientation, page size, and source. Also, allows printer connections to support network operations.

## SUMMARY

Displays a text box with the standard flight plan heading. This summary will give the times, fuels, and routing information in text format.

## EXIT

Returns focus to the OPARS main screen.

### 6.3.1.2 DISPLAY

The commands in this menu are used to customize the display. You can turn on or turn off each of the following items when the display is drawn or have it redraw the flight plan with an option enabled. A checked command indicates that option has been enabled.

# OPARS USER MANUAL

---

## NOTAMS WEB PAGE

Opens the OPARS Browser and connects to the United States NOTAMS Web page for DoD flights <<https://www.notams.jcs.mil/>>.

## SIGMETS

Displays current SIGMETs on the graphic display. Only those SIGMETs that have been previously downloaded using the File menu are available.

## METARS

Displays current METARs on the graphics display. Only those METARs that have been previously downloaded using the File menu are available.

## TAFS

Displays either TAFs that are valid during the flight period or all TAFs available along the flight path. Only those TAFs that have been previously downloaded using the File menu are available.

## TRACK WAYPOINTS

Displays the waypoints on the flight plan track as small circles with labels.

## WINDS

Displays wind barb symbols indicating wind speed and direction at each track waypoint.

## NAVAIDS

Displays all Navaids within the map area, including identifiers.

## AIRPORTS

Displays all airports within the map area, including ICAO identifiers.

## NAMES

Displays geographically positioned names of certain features (such as lakes, gulfs, oceans, etc.). Certain major cities are also identified on the flight plan map.

## DIVERTS

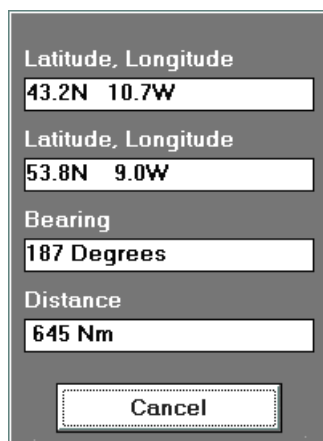
If available, displays and labels divert points. This command will be available if valid divert points are included in the flight plan request.

# OPARS USER MANUAL

---

## RANGE

Displays a dialog on the screen containing information as shown in Figure 40. A resizable chord is displayed with one end anchored at a waypoint and the other attached to the pointer. By moving the pointer, the distance from the anchor point and the position under the pointer is calculated and displayed. The anchor point may be repositioned by moving the pointer to the desired anchor point and clicking.

A screenshot of a software dialog box titled "Range Feature Dialog". The dialog has a dark gray background and contains several text input fields. The first field is labeled "Latitude, Longitude" and contains the text "43.2N 10.7W". The second field is also labeled "Latitude, Longitude" and contains "53.8N 9.0W". The third field is labeled "Bearing" and contains "187 Degrees". The fourth field is labeled "Distance" and contains "645 Nm". At the bottom of the dialog is a button labeled "Cancel".

Latitude, Longitude
43.2N 10.7W
Latitude, Longitude
53.8N 9.0W
Bearing
187 Degrees
Distance
645 Nm
Cancel

**Figure 40. Range Feature Dialog**

## TOOLBAR

Displays the toolbar under the menu bar. Checked command indicates the toolbar is turned on. The toolbar provides shortcuts to the menu commands.

## AIRSPACE BOUNDARIES

Displays a list to select types of airspace boundaries for display, including: FIR, UIR, Control Area (CTA), ADIZ, and All.

## SPECIAL AIRSPACE BOUNDARIES

Displays a list to select types of special airspace boundaries for display, including: Alert, Danger, Military Ops, Prohibited, Restricted, Temporary Reserved, Warning, and All.

## ZOOM

Zooms in on the area selected with the zoom area box.

## CURSOR

Displays the zoom area box on the map display.

# OPARS USER MANUAL

## ZOOM AREA

Available only when the zoom area box is displayed. Zooms in on the area selected.

## FULL AREA

Returns the map display to the full view from a zoom view.

### 6.3.1.3 GRAPHS

A feature that will graphically plot flight plan parameters in relation to the distance traveled. See Figure 41. There are three choices for the type of graph – line, bar, and area charts. Click the desired plot type. There are eight choices – Fuel Remaining, Fuel Flow, Total Burn, Ground Speed, True Airspeed, Wind Factor, Air Temperature, and Flight Level. Click the desired plot parameter. When finished viewing the graph, click **Cancel**.

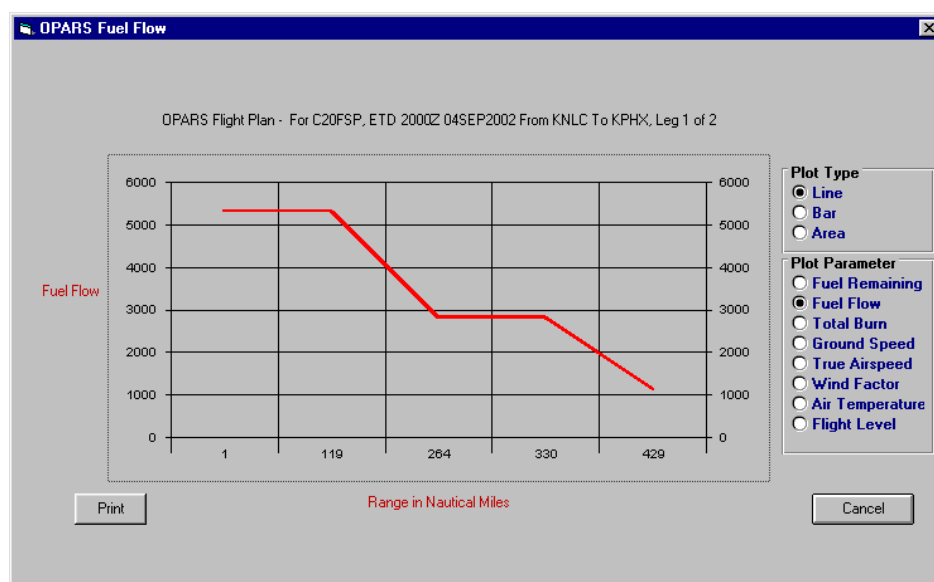


Figure 41. Graph Showing Fuel Flow as a Function of Distance

### 6.3.1.4 BROWSE

This menu allows you to get more detailed information about the track Nav aids, airports, or waypoints. These items must have been selected in the **Display** menu before they show up on your display.

## TRACK

Provides information about track Nav aids. When selected, a Point Information dialog is displayed on the right side of the flight plan map. To get information about a Nav aid, click on the Nav aid symbol on the flight plan map. The Point Information dialog will update showing the Nav aid data including time, fuel, distance and other flight parameters.

# OPARS USER MANUAL

---

Double-clicking any one of the parameters in the Point Information screen will change the display to show the values for that one parameter for each Navaid on the flight track. To return to the general Point Information dialog, double-click on any Navaid label in the dialog.

## AIRPORTS

Displays selected airports on the flight plan map. Moving the pointer over a displayed airport will display the airport information in the Point Information dialog. The information displayed includes name, position, type, magnetic variation, and elevation.

## NAVAIDS

When selected, the waypoint types that were selected in **Config** will be displayed on the original map. As you move the pointer around the screen and hover on a waypoint, information about position, country code, ICAO, type, code, and magnetic variation will be displayed in the Point Information screen.

### 6.3.1.5 CONFIG

Contains commands for Metcast Communications, Color, Navaids, and Airport settings. Each command has user selectable options for the display of the flight plan.

#### CONFIG METCAST COMMUNICATIONS

Displays the Communications Setup dialog as shown in Figure 42. The correct URL for the Metcast Server may be entered.

# OPARS USER MANUAL

---

**Communications Setup**

Server Universal Resource Locator

Server URL:

Metcast Server URL:

**OPARS Account Information**

User Name:

User Password:

**Output Controls**

☒ Use NFP Format

☐ Use CRD Format

**Request Controls**

☒ Automatically Send request

☒ Automatically Close Dialog

☒ Automatically Display Flightplan

**Proxy Server Information**

☐ Use Proxy Server

Proxy URL:

Port:

User Name:

Password:

**Proxy Type**

☐ CERN Proxy

☒ TUNNEL Proxy

OK Cancel

Figure 42. Metcast Communications Configuration Dialog

## GEOGRAPHY COLORS

Displays the **Flight Plan Display Setup** dialog. This color choice dialog is the same as discussed in Section 5.3 FLIGHT PLAN GRAPHICS on page 26.

## AIRSPACE BOUNDARIES

Displays the **Airspace Boundaries Color Setup** dialog to set the display colors of airspace boundaries for the different types of airspaces (see Figure 43 below).

# OPARS USER MANUAL

---



Figure 43. Airspace Boundary Color Setup Dialog

## SPECIAL BOUNDARIES

Displays the **Special Boundary Setup** dialog, as shown in Figure 44, to select the colors to be used for displaying the special airspace boundaries.

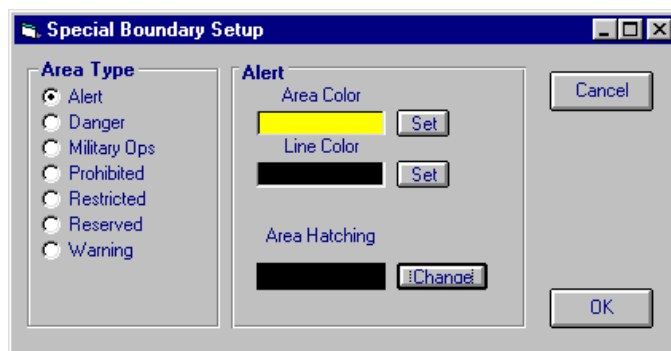


Figure 44. Special Boundary Setup Dialog

## PRODUCT DISPLAY PARAMS

Displays the **Product Display Configure** dialog as shown in Figure 45. This color choice dialog sets the display colors for Metcast products.

# OPARS USER MANUAL

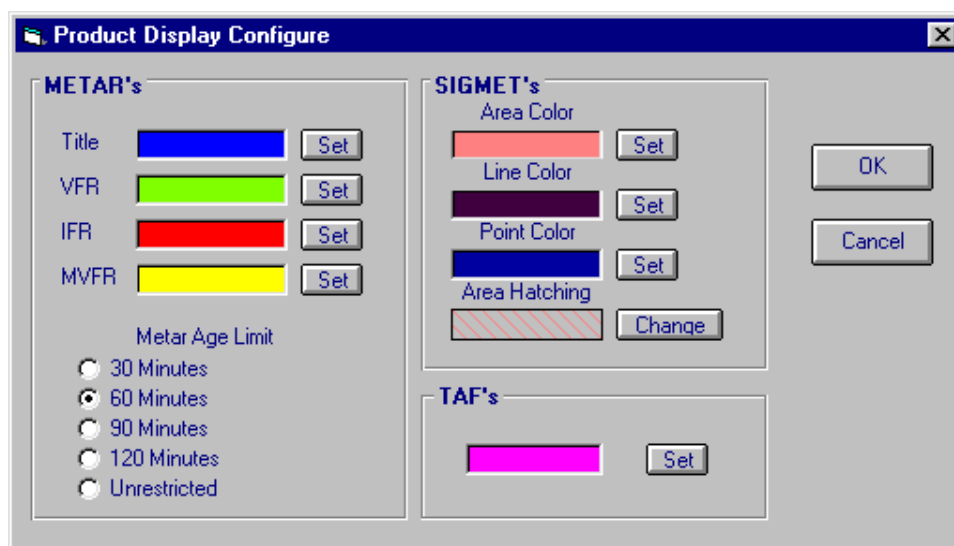


Figure 45. Product Display Configure Dialog

## NAVAIDS

User selectable options for the display of Nav aids on the flight plan graphic. Select from eight Nav aid types – INTERSECTIONS, VOR, VORTAC, TACAN, VOR-DME, NDB, NDB-DME, or DME (excluding ILS-DME). Nav aid identifier labels may also be displayed.

## AIRPORTS

User selectable options for the display of airports on the flight plan graphic. Select from four airport types – Active Civilian, Joint Military/Civilian, Active Military, or Less than Minimum. Airport identifier labels may also be displayed.

## SPHERICAL PROJECTION MODE

This toggle setting changes the map projection between Mercator and Spherical.

### 6.3.2 EXPLANATION OF TOOLBAR

The Toolbar (see Figure 46) provides action button icons that represent command shortcuts. If you hover the pointer over a button, a ToolTip will provide a description of the button. All Toolbar commands are also available from the menu bar. The following paragraphs describe the use of each toolbar button, in sequence from left to right.



Figure 46. Graphics Flight Plan Display Toolbar

# OPARS USER MANUAL

---

## 6.3.2.1 ARROW

Changes the pointer function to the **Arrow** and erases the **ZoomBox**.

## 6.3.2.2 ZOOMBOX

Displays a ZoomBox rectangle that can be moved or resized to indicate the viewable area when zoomed.

## 6.3.2.3 ZOOM

Zooms in on the area indicated by the ZoomBox.

## 6.3.2.4 FULL VIEW

Zooms out and restores the map display to full view.

## 6.3.2.5 WINDS

Toggle button to turn on and off symbolic display of wind direction and speed at Navaids along the flight path.

## 6.3.2.6 NAVAIDS

Toggle button to turn on and off Navaid labels along the flight path.

## 6.3.2.7 NAMES

Toggle button to turn on and off names of geographic features on the map display.

## 6.3.2.8 DISTANCE

Displays resizable chord to determine range and distance between two points on the map.

## 6.3.2.9 AIRPORTS

Toggle button to turn on and off the display of military/civilian airport locations.

# OPARS USER MANUAL

---

## 6.3.2.10 WAYPOINTS

Toggle button to turn on and off the display of registered waypoints from the aeronautical database.

## 6.3.2.11 COLORS

Calls the Flight Plan Display Setup dialog to change the color scheme of the display.

## 6.3.2.12 PRINT

Prints display to the default printer.

## 6.3.2.13 CLIPBOARD

Copies the display to the clipboard.

## 6.3.2.14 GRAPHS

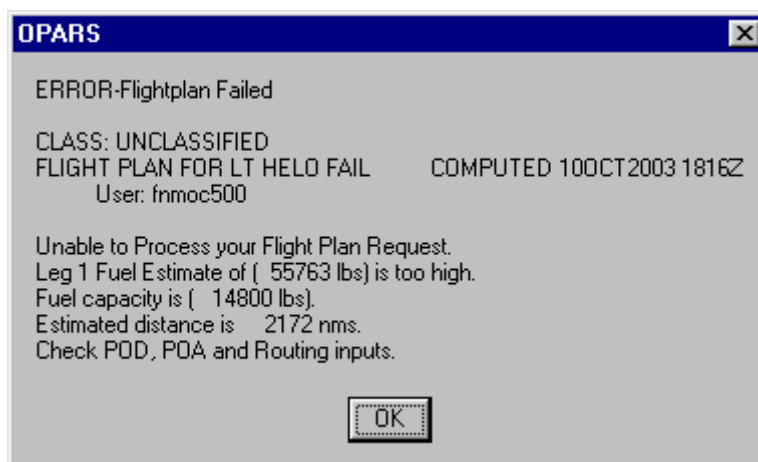
Displays the graphs of eight different flight parameters, like Fuel Remaining and Wind Factors.

## 6.3.2.15 EXIT

Quits the Display function and returns to the OPARS main menu.

## 6.4 TROUBLESHOOTING

A flight plan request will fail to produce a viable flight plan if factors cause the aircraft to exceed its limits, such as flight leg headwinds that cause a fuel requirement exceeding the aircraft capacity. In these cases, the Opars Request Module will indicate the program was unable to process the flight leg as shown in Figure 47.



**Figure 47. Notification of Flight Plan Failure**

To make corrections, open the flight plan request and modify the necessary parameters. Then, resubmit the request for processing.

Table 1 lists common reasons for OPARS requests failing to produce viable flight plans.

**Table 1. Common Errors in OPARS Requests**

COMMON REASONS FOR FLIGHT PLAN REQUEST FAILURE
Aircraft configuration not implemented. Resubmit as Special Performance case.
Arrival bias is too high.
Bad Time of Arrival data in specified leg.
Cannot climb to flight level and descend within short leg distance.
Cannot cruise at specified lower altitude due to estimated gross weight.
Cannot expand routing for leg.
Cannot expand routing. POD and POA are the same.
Cannot find POA airport in Flight Planner Database.

# OPARS USER MANUAL

---

## COMMON REASONS FOR FLIGHT PLAN REQUEST FAILURE

Cannot find waypoint/Navaid.

Cannot fly at initial cruise altitude due to estimated gross weight.

Cannot route on specified Jet Route.

Could not calculate Direct routing between specified points.

Could not resolve Equal Time Point.

Departure bias time is too high. Maximum is 60 minutes.

Did not find specified path between two points.

Fuel bias for Start, Taxi, etc. is too high.

Fuel load is less than the sum of the biases.

Fuel required exceeds aircraft capacity.

Fuel required exceeds fuel load, reduce cargo to increase fuel.

Lower altitude is greater than upper altitude.

Maximum gross weight exceeded.

Maximum landing weight exceeded.

No standard altitude for course within upper and lower altitude limits (0 – 1500 ft.).

Operational weight exceeds maximum allowable weight.

Too much fuel remains from previous leg to load requested cargo.

Unable to process. Estimated distance for leg is 0 NM

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## A. OPARS DISTRIBUTION FILE LISTING

Table 2. OPARS Distribution Files

Folder	Filename	Size	Date	Time
/OPARS	ads95.exe	749,280	3/28/01	12:00 AM
	ads98.exe	736,480	3/28/01	12:00 AM
	blank.bmp	15,606	1/12/01	11:34 PM
	debug.dat	733	8/29/02	10:32 AM
	dsclient.exe	3,100,432	3/28/01	12:00 AM
	logo.wmf	698,598	11/21/00	12:38 PM
	opars.con	371	7/10/02	2:36 AM
	OPARS31.exe	3,375,104	8/30/02	2:27 AM
	oparsurl.dat	396	8/30/02	9:37 AM
	oprout.exe	413,696	8/30/02	11:41 AM
	Setup.bmp	164,278	9/26/01	8:29 AM
	setup.par	1,804	7/10/02	12:56 AM
	world.ndx	28,658	3/22/95	8:56 PM
	world.vec	950,340	3/22/95	8:56 PM
/AERODB	air.dat	21,459	6/5/02	3:20 PM
	airports.mdb	1,347,584	8/2/02	4:35 PM
	AirspaceBoundary.ndx	46,817	8/5/02	8:44 AM
	AirspaceBoundary.rec	510,568	8/5/02	8:44 AM
	country.pc	3,966	6/5/02	9:49 AM
	jetroute.mdb	16,486,400	8/2/02	4:38 PM
	SpecialBoundary.ndx	906,056	8/5/02	8:45 AM
	SpecialBoundary.rec	6,520,592	8/5/02	8:46 AM
	version.txt	198	8/1/02	3:38 PM
/FLGTPLAN	Sample1.NFP	10,470	3/6/02	4:47 PM
	Sample2.NFP	10,971	3/6/02	4:48 PM
/HELP	aircraft1.hlp	647	8/13/01	11:21 AM
	aircraft2.hlp	546	8/13/01	10:34 AM
	aircraft3.hlp	410	8/13/01	9:39 AM
	aircraft4.hlp	355	8/13/01	9:40 AM
	aircraft5.hlp	1,179	8/13/01	11:34 AM
	altdiv.hlp	1,124	8/14/01	8:19 AM
	altitud1.hlp	388	8/13/01	12:21 PM
	altitud2.hlp	306	8/13/01	12:22 PM
	altitud3.hlp	539	8/14/01	2:27 PM
	basedt1.hlp	360	8/14/01	1:04 PM
	basedt2.hlp	413	8/14/01	1:07 PM
	basedt3.hlp	459	10/2/01	2:33 PM
	basedt4.hlp	519	8/13/01	10:31 AM
	fuel1.hlp	1,773	8/14/01	12:51 PM
	fuel10.hlp	163	8/13/01	9:47 AM
	fuel2.hlp	237	8/13/01	10:39 AM
	fuel3.hlp	456	8/13/01	1:07 PM
	fuel4.hlp	398	8/13/01	4:30 PM
	fuel5.hlp	233	8/13/01	10:42 AM
	fuel6.hlp	266	8/13/01	10:43 AM
	fuel7.hlp	268	8/13/01	10:44 AM
	fuel8.hlp	165	8/13/01	10:45 AM

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Folder	Filename	Size	Date	Time
	fuel9.hlp	387	8/13/01	10:45 AM
	misc1.hlp	373	8/13/01	10:46 AM
	misc3.hlp	785	8/13/01	12:19 PM
	mission1.hlp	347	8/18/97	3:29 PM
	mission2.hlp	291	8/18/97	3:32 PM
	mission3.hlp	364	8/14/01	8:30 AM
	mission4.hlp	152	8/13/01	10:53 AM
	mission5.hlp	147	8/13/01	10:54 AM
	mission6.hlp	260	8/14/01	8:33 AM
	mission7.hlp	160	8/13/01	10:55 AM
	mission8.hlp	157	8/13/01	10:56 AM
	mission9.hlp	226	8/13/01	10:57 AM
	options1.hlp	1,161	8/14/01	12:39 PM
	options2.hlp	507	8/13/01	9:53 AM
	PC Aeronautical Database Update Procedures.htm	2,060	8/21/02	9:54 AM
	pod1.hlp	2,549	10/2/01	2:21 PM
	pod10.hlp	973	10/2/01	1:48 PM
	pod11.hlp	549	8/14/01	8:15 AM
	pod5.hlp	2,544	10/2/01	2:15 PM
	pod9.hlp	3,372	10/2/01	2:23 PM
	sperf1.hlp	233	8/13/01	10:19 AM
	sperf2.hlp	382	8/13/01	1:04 PM
	sperf3.hlp	231	8/13/01	10:21 AM
	sperf4.hlp	302	8/13/01	1:00 PM
	sperf5.hlp	325	8/13/01	1:05 PM
	sperf6.hlp	216	8/13/01	10:37 AM
	sperf7.hlp	357	8/13/01	1:02 PM
	sperf8.hlp	252	8/13/01	12:58 PM
	weathr1.hlp	720	8/13/01	12:26 PM
	weathr2.hlp	698	8/13/01	12:26 PM
/REQUESTS	RequestSample.1	6,241	3/6/02	4:44 PM
	RequestSample.2	12,005	3/6/02	4:44 PM
/UTIL	airpln.def	18	6/05/02	7:51 AM
	aoptions.dat	25	9/26/01	8:45 AM
	fpd.clr	1,633	9/25/01	3:22 PM
	fpd.usr	1,903	1/25/01	8:45 AM
	fpsrtord.dat	5	7/10/02	12:49 PM
	names.lst	272,995	9/09/99	11:14 AM
	noptions.dat	45	9/26/01	8:45 AM
	rgsrtord.dat	5	9/26/01	8:43 AM
	WOption.dat	45	7/31/02	11:49 AM
/SYSTEM or SYSTEM32	Comdlg32.ocx	140,488	5/22/00	1:00 AM
	CSHTP32.OCX	120,552	7/30/01	9:12 AM
	dao2535.tlb	73,184	5/15/98	1:00 AM
	Dao350.dll	570,128	4/27/98	1:00 AM
	Expsrv.dll	379,152	6/24/99	5:40 PM
	MFC40.DLL	924,432	11/18/99	12:04 PM
	Mfc42.dll	995,383	7/17/00	5:41 PM
	Mscal.ocx	89,600	6/26/98	2:00 AM
	MSCHRT20.OCX	1,008,432	6/26/98	1:00 AM
	MSCOMCT2.OCX	647,872	5/22/00	5:58 PM

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Folder	Filename	Size	Date	Time
	Mscmctl.ocx	1,057,552	1/06/99	3:18 AM
	msjet35.dll	1,050,896	9/28/99	7:42 PM
	MSJINT35.DLL	139,264	6/01/98	1:00 AM
	MSJTER35.DLL	36,864	6/01/98	1:00 AM
	MSRD2X35.DLL	262,144	6/01/98	1:00 AM
	msrepl35.dll	415,504	8/25/99	12:57 PM
	msstdfmt.dll	118,784	7/15/00	12:00 AM
	MSVCRT.dll	290,869	7/17/00	5:41 PM
	MSVCRT40.DLL	65,024	7/26/00	3:00 PM
	Mswinsck.ocx	109,248	5/22/00	2:00 AM
	Threed32.ocx	200,704	1/12/96	1:00 AM
	vbajet32.dll	30,992	1/22/99	1:00 AM

# OPARS USER MANUAL

## B. OUTPUT FORMAT DESCRIPTIONS

### B.1 INTRODUCTION

OPARS provides fifteen output formats for printed flight plans:

[KNEEBOARD 1..... \(1KB\)](#)  
[KNEEBOARD 2..... \(2KB\)](#)  
[KNEEBOARD 3..... \(3KB\)](#)  
[KNEEBOARD 4..... \(4KB\)](#)  
[KNEEBOARD 5..... \(5KB\)](#)  
[TACTICAL..... \(TAC\)](#)  
[USAF-70](#)  
[USAF-077](#)  
[ABBREVIATED..... \(ABB\)](#)  
[KNEEBOARD 9..... \(9KB\)](#) (No Divert Fuel Planning)  
[KNEEBOARD 9..... \(9KB\)](#) (Divert Fuel Planning)  
[AS DOWNLOADED](#)  
[MACPLAN..... \(MAC\)](#)  
[Personal Data Asst... \(PDA\)](#)  
[Overwater](#)

All OPARS Flight Plan outputs include three sections: Header, Body, and Trailer.

The Header includes general information that applies to the whole flight. This includes fuel, time, and distance values; arrival time; and ramp and landing weight. The Header section is identical in every output format.

The Body includes reporting waypoint information for the flight with column headings that vary according to the output format. Columns include information like flight level, wind factor, ground speed, cumulative distance covered, estimated elapsed time, total fuel burnoff, etc. Table 3 shows the column headings available for each output format.

**Table 3. OPARS Output Format Column Headings**

FORMAT	COLUMN HEADINGS															
Abbreviated	(Special Use Format)															
Kneeboard1	TO	DST	MC	FL	OAT	WIND	DFT	TAS	G/S	CUMD	ETE	ETR	B/O	T/BO		
Kneeboard2	CPT	FL	TMP	WIND	T/C	T/H	M/H	TAS	G/S	ZD	CD	ETE	ETR	EFU	EFR	
Kneeboard3	TO	FL	T/C	M/C	WIND	DFT	G/S	TAS	DIS	CUMD	DISR	ETE	CUMT	ETR	EFR	
Kneeboard4	TO	FREQ	FL	MC	MH	TAS	GS	ETE	ETR	DISR	F/F	EFU	EFR			
Kneeboard5	TO	DIST	MC	FL	WIND	DFT	TAS	G/S	CUMD	ETE	ETR	F/F	EFR			
Kneeboard9	TO	LAT/LONG	FL	MC	MH	WIND	G/S	TAS	DIS	CUMD	ETE	T/BO	M/BO	EFR		
Tactical	NAV CHAN	MHD D	ETE ETR	ETA ATA	EFU AFU	EFR AFR	C LAT P LONG	FL VAR	OAT WIND	TC TAS						
USAF-70	FIX ROUTE	CH FREQ	LAT LONG	MAG CRS	DIST	GND SPD	ETE ETR	ETA/ATA	FUEL	ACTUAL FUEL						
USAF-077	FIX ROUTE	FREQ CH	LAT LONG	TC MC	W/V DCA	TH MH	DIST REMN	GND SPD	ETE REMN	(PETA) ETA	FUEL					

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FORMAT	COLUMN HEADINGS															
MAC	LOCATION	TTR	WIND	TAS	GS	ZD	ZT	TT	TDR	TC	MC	MH	LAT LONG	ALT	B/O	TDEV
PDA	TO	T/C	WIND	DFT	G/S	DIS	DISR	FL	TAS	ETE	CUMT	ETR	(K)EFR			
Overwater	WAYPOINT LAT LONG	LEG TIME CUM TIME	FL	TEMP	WIND	T/C G/S	M/C TAS	M/H MCH	DIST DREM	BURN FREM	T/BO M/BO	LUSE	RUSE	TUSE	FUEL	WIND

The Trailer includes summary information such as emergency data, equal time point (where applicable), general overall wind characteristics, boundary crossings, emergency data (when outside CONUS) and special use airspace penetration.

**Note:** In the following section, each output example is followed by a line-by-line explanation. The numbers in the left margin of the output examples denote corresponding line numbers in the explanation.

## B.2 KNEEBOARD 1 (1KB) OUTPUT EXAMPLE

```

1)  FLIGHT PLAN FOR LT AVIATOR                      COMPUTED 06NOV2000 1912Z

2)  BASED UPON 2000110600  WEATHER DATA

3)  BASED UPON 06NOV2000-02DEC2000 AERONAUTICAL DATA

4)  LEG01 STANDARD KMRY   TO KNZY                      06NOV2000

5)  ACFT TYPE P3C99F      DRAG: 156      EFF:  90      FUEL: JP-5

6)  PLANNED FOR ETD 2300Z      INITIAL CRUISE FLIGHT LEVEL 290

7)
8)  POA      FUEL  TIME  DIST ARRIVE  RAMP      LAND      CARGO      OPNLWT
9)  ALT      ...
10) RES      10000 02/22
11) TOT      14441 03/22

12) FUEL BIAS:  661  DBIAS:    0  ABIAS:    0  IBIAS:    0

13) ROUTING USED FOR THIS LEG
14) KMRY .. AVE J1 LAX .. KNZY

15)  TO      DST  MC      FL OAT WIND  DFT TAS G/S CUMD  ETE  ETR  B/O  T/BO
16)  KMRY    1    ***** 4    015 00000 00  ***  ***  1    00/01 00/59  600    600
17)  AVE     107 105.9 260 -26 33083 R08 ***  *** 108  00/19 00/40  1700   2400
18)  *TOC*   20  129.4 260 -31 33591 R02 ***  *** 128  00/03 00/37  200    2600
19)  AVE42   22  129.5 290 -31 33589 R02 346 435 150  00/03 00/34  100    2800
20)  REYES   30  129.3 290 -31 33586 R03 346 432 180  00/04 00/30  200    3100
21)  LAX39   17  131.5 290 -31 33584 R02 346 429 197  00/02 00/28  100    3200
22)  LAX     39  124.0 290 -31 33579 R04 346 423 236  00/06 00/22  300    3500
23)  *SDP*   26  125.6 290 -31 33574 R04 345 419 262  00/04 00/18  200    3800

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# OPARS USER MANUAL

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24) KNZY 70 127.5 6 007 24504 L01 \*\*\* \*\*\* 332 00/18 00/00 600 4400  
25) KMRV N36353W121509 AVE N35388W119587 \*TOC\* N35223W119447  
26) AVE42 N35044W119294 REYES N34395W119081 LAX39 N34256W118571  
27) LAX N33560W118259 \*SDP\* N33360W118061 KNZY N32420W117129  
28) \*TOC\* = TOP OF CLIMB  
29) \*SDP\* = START DESCENT POINT  
30) TOTAL WIND FACTOR 70KTS  
31) ADDITIONAL ALTITUDE DATA  
32) FL/FUEL/ETE (270/ 4500/01+02) (250/ 4600/01+03) (230/ 4700/01+03)

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## KNEEBOARD 1 (1KB) OUTPUT EXPLANATION

LINE 1 FLIGHT PLAN FOR: [Printed Label]  
LT AVIATOR: Pilot's Name  
COMPUTED 06NOV2000 1912Z: ZULU Date and Time Flight Plan Computed

LINE 2 BASED UPON 2000110600 WEATHER DATA  
2000: Year  
11: Month  
06: Day  
00: Synoptic Weather hour from which Data Base was constructed.

LINE 3 BASED UPON 06NOV2000-02DEC2000 AERONAUTICAL DATA:  
Effective dates of flight plan aeronautical data

LINE 4 LEG01: Leg Number  
STANDARD: Standard Leg  
KMRV: Point of Departure  
TO KNZY: Point of Arrival  
06NOV2000: Date of Departure

LINE 5 ACFT TYPE: P3C99F: Aircraft Type and Configuration  
DRAG: 156: Drag Count (156)  
EFF: 90: Efficiency of Engine (90%)  
FUEL: JP-5: Fuel type used

LINE 6 PLANNED FOR ETD 2300Z: Hour of Departure (ZULU)  
Initial Cruise Flight Level 290: Initial Cruise at 29000 ft

LINE 7 Column Headings:  
FUEL: Fuel Weight in lbs  
TIME: Time in hours/minutes  
DIST: Distance in Nautical Miles  
ARRIVE: Arrival Time (ZULU)  
RAMP: Ramp Weight in lbs  
LAND: Landing Weight in lbs  
CARGO: Cargo Weight in lbs  
OPNLWT: Operational Weight of Aircraft in lbs

# OPARS USER MANUAL

---

LINE 8 POA: Fuel, Time, and Weight Calculations from Point of Departure to Point of Arrival  
4441: Fuel Required from POD to POA  
01/00: En route Time (1 Hour)  
332: Distance (332 NM)  
0000Z: Arrival Time (ZULU)  
86441: Total Ramp Weight (86441 lbs)  
82000: Landing Weight (82000 lbs)  
0: Amount of Cargo (0 lbs)  
72000: Operational Weight (72000 lbs)

LINE 9 ALT: Fuel and Time Calculations from Point of Arrival to Alternate Airport  
  
...: ALT not requested

LINE 10 RES: Reserve Fuel and Time Calculations  
10000: Reserve Fuel  
02/22: Reserve Time

LINE 11 TOT: Total Fuel and Time Calculations  
14441: Total Fuel (En route + ALT + Reserve)  
03/22: Total Time (En route + ALT + Reserve)

LINE 12 FUEL BIAS: 661: Fuel Required for Taxi and Takeoff (lbs)  
DBIAS: 0 : Departure Bias (lbs)  
ABIAS: 0 : Arrival Bias (lbs)  
IBIAS: 0 : Ice Bias (lbs)

LINE 13 ROUTING USED FOR THIS LEG: [Printed Label]

LINE 14 KMRY .. AVE J1 LAX .. KNZY: Routing Summary

LINE 15 Column Headings:  
TO: Checkpoint/Navaid Name  
DST: Distance to Point in Nautical Miles  
MC: Magnetic Course (Degrees and Tenths)  
FL: Flight Level (Hundreds of feet)  
OAT: Outside Air Temperature in Degrees Celsius  
WIND: Wind Direction and Velocity in the Form dddvv Wind is a Spot Value at Each Checkpoint  
DFT: Degrees of Drift Left or Right. Drift Angle is an Average Value along the Track between Checkpoints Based on Average Wind Factor for Each Segment.  
TAS: True Air Speed (knots)  
G/S: Ground Speed (knots)  
CUMD: Cumulative Distance from POD  
ETE: Estimated Time En route (hours/minutes)  
ETR: Estimated Time Remaining (hours/minutes)  
B/O: Burn Off: Total fuel in lbs burned from previous point.  
T/BO: Total Burn Off: Total fuel in lbs burned from POD to this Point.

LINE 16 KMRY: Point of Departure  
1: Distance (1 NM)  
\*\*\*\*: Magnetic Course (Not Computed)

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# OPARS USER MANUAL

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4: Flight Level (400 feet)  
015: Outside Air Temperature (15 degrees Celsius)  
00000: Wind Direction and Velocity  
00: Drift Factor  
\*\*\*: True Air Speed (Not Computed)  
\*\*\*: Ground Speed (Not Computed)  
1: Cumulative Distance (1 NM)  
00/01: Time En route (1 minute)  
00/59: Time Remaining (59 minutes)  
600: Fuel Burned (600 lbs)  
600: Total Fuel Burned from POD (600 lbs)

LINE 17 AVE: Checkpoint Name  
107: Distance from Previous Point (107 NM)  
105.9: Magnetic Course  
260: Flight Level (26000 feet)  
-26: Outside Air Temperature (-26 degrees Celsius)  
33083: Wind Direction and Velocity  
R08: Drift Factor (Right 8 Degrees)  
\*\*\*: True Air Speed (Not Computed)  
\*\*\*: Ground Speed (Not Computed)  
108: Cumulative Distance (108 NMs)  
00/19: Time En route (19 minutes)  
00/40: Time Remaining (40 minutes)  
1700: Fuel Burned (1700 lbs)  
2400: Total Fuel Burned from POD (2400 lbs)

LINES 18 - LINE 24 Covers Remaining Checkpoints and Point of Arrival

LINES 25 - LINE 27 Geographic Coordinates of each "TO" Point to nearest Tenth Degree in form HDDMMTHDDMMT

LINE 28 Top of Climb Identification

LINE 29 Start Descent Point Identification

LINE 30 TOTAL WIND FACTOR 70 Kts: Total Wind Factor this Leg.

LINE 31 ADDITIONAL ALTITUDE DATA

LINE 32 FL/FUEL/ETE: Alternate Flight Levels Information.  
270/4500/01+02: Flight Level of 27000 feet would have used 4500  
lbs of Fuel and Time of 1 Hour and 2 minutes.  
250/4600/01+03: Flight Level of 25000 feet would have used 4600  
lbs of Fuel and Time of 1 Hour and 3 minutes.  
230/4700/01+03: Flight Level of 23000 feet would have used 4700  
lbs of Fuel and Time of 1 Hour and 3 minutes.

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## B.3 KNEEBOARD 2 (2KB) OUTPUT EXAMPLE

- 1) FLIGHT PLAN FOR LT AVIATOR                      COMPUTED 06NOV2000 1506Z
- 2) BASED UPON 2000110600 WEATHER DATA
- 3) BASED UPON 06NOV2000-02DEC2000 AERONAUTICAL DATA

# OPARS USER MANUAL

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4) LEG01 STANDARD KMRY TO KNZY 06NOV2000

5) ACFT TYPE P3B99F5 DRAG: 156 EFF: 100 FUEL: JP-5

6) PLANNED FOR ETD 0700Z INITIAL CRUISE FLIGHT LEVEL 290

7) FUEL TIME DIST ARRIVE RAMP LAND CARGO OPNLWT

8) POA 4828 01/08 332 0807Z 86501 81673 500 72500

9) ALT 673 00/11 64 0819Z

10) RES 8000 01/52

11) TOT 13501 03/11

12) FUEL BIAS: 661 DBIAS: 0 ABIAS: 0 IBIAS: 0

13) ROUTING USED FOR THIS LEG

14) KMRY .. AVE J1 LAX .. KNZY

15) CPT FL TMP WIND T/C T/H M/H TAS G/S ZD CD ETE ETR EFU EFR

16) KMRY 4 00 00000 000 000 \*\*\*\*\* \*\*\* \*\*\* 1 1 00/01 01/07 600 12800

17) KMRY N36353W121509

18) \*TOC\* 290 P03 01564 122 107 91.4 \*\*\* \*\*\* 94 95 00/21 00/46 1800 10900

19) \*TOC\* N35452W120118

20) AVE 290 P03 01561 121 111 94.7 342 352 12 107 00/02 00/44 100 10800

21) AVE N35388W119587

22) AVE42 290 P02 02053 145 138 121.9 342 374 42 149 00/07 00/37 400 10400

23) AVE42 N35044W119294

24) REYES 290 P01 02048 145 138 122.4 341 368 30 179 00/05 00/32 200 10100

25) REYES N34395W119081

26) LAX39 290 P01 02044 147 141 125.3 341 366 17 196 00/03 00/30 100 9900

27) LAX39 N34256W118571

28) LAX 290 00 03035 139 133 117.9 340 354 39 235 00/07 00/23 300 9500

29) LAX N33560W118259

30) \*SDP\* 290 00 04029 141 135 120.4 339 347 27 262 00/05 00/18 200 9300

31) \*SDP\* N33354W118055

32) KNZY 6 M03 10002 140 140 126.9 \*\*\* \*\*\* 69 331 00/18 00/00 600 8600

33) KNZY N32420W117129

34) \*TOC\* = TOP OF CLIMB

35) \*SDP\* = START DESCENT POINT

36) ALTERNATE AIRPORT :KNZJ

37) KNZJ 290 00 04523 336 339 325.4 338 337 64 395 00/11 00/00 600 7900

38) KNZJ N33403W117438

39) TOTAL WIND FACTOR 16KTS

40) ADDITIONAL ALTITUDE DATA

41) FL/FUEL/ETE (270/ 4900/01+08) (250/ 5000/01+10) (230/ 5100/01+11)

# OPARS USER MANUAL

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## KNEEBOARD 2 (2KB) OUTPUT EXPLANATION

---

LINE 1 FLIGHT PLAN FOR: [Printed Label]  
LT AVIATOR: Pilot's Name  
COMPUTED 06NOV2000 1506Z: ZULU Date and Time Flight Plan Computed

LINE 2 BASED UPON 2000110600 WEATHER DATA  
2000: Year  
11: Month  
06: Day  
00: Synoptic Weather Hour from which Data Base was constructed

LINE 3 BASED UPON 06NOV2000-02DEC2000 AERONAUTICAL DATA:  
Effective dates of flight plan aeronautical data

LINE 4 LEG01: Leg Number  
STANDARD: Standard Leg  
KMRY: Point of Departure  
TO KNZY: Point of Arrival  
06NOV2000: Date of Departure

LINE 5 ACFT TYPE: P3B99F5: Aircraft Type and Configuration  
DRAG: 156 : Drag Count (156)  
EFF: 100 : Efficiency of Engine (100%)  
FUEL: JP-5 : Fuel type used

LINE 6 PLANNED FOR ETD 0700Z: Hour of Departure (ZULU)  
Initial Cruise Flight Level 290: Initial Cruise at 29000 ft

LINE 7 Column Headings:  
FUEL: Fuel Weight in lbs  
TIME: Time in hours/minutes  
DIST: Distance in Nautical Miles  
ARRIVE: Arrival Time (ZULU)  
RAMP: Ramp Weight in lbs  
LAND: Landing Weight in lbs  
CARGO: Cargo Weight in lbs  
OPNLWT: Operational Weight of Aircraft in lbs

LINE 8 POA: Fuel, Time, and Weight Calculations from Point of Departure  
to Point of Arrival  
4828: Fuel Required from POD to POA  
01/08: En route Time  
332: Distance  
0807Z: Arrival Time (ZULU)  
86501: Total Ramp Weight  
81673: Landing Weight  
500: Amount of Cargo  
72500: Operational Weight

LINE 9 ALT: Fuel and Time Calculations from Point of Arrival to Alternate  
Airport  
673: Fuel to ALT  
00/11: Time to ALT  
64: Distance  
0819Z: Arrival Time (ZULU)

# OPARS USER MANUAL

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LINE 10     RES:     Reserve Fuel and Time Calculations  
             8000:     Reserve Fuel  
             01/52:    Reserve Time

LINE 11     TOT:     Total Fuel and Time Calculations  
             13501:    Total Fuel (En route + ALT + RES)  
             03/11:    Total Time (En route + ALT + RES)

LINE 12     FUEL BIAS:   661   : Fuel required for Taxi and Takeoff (lbs)  
             DBIAS:       0   : Departure Bias Fuel (lbs)  
             ABIAS:       0   : Arrival Bias Fuel (lbs)  
             IBIAS:       0   : Ice Bias Fuel (lbs)

LINE 13     ROUTING USED FOR THIS LEG:       [Printed Label]

LINE 14     KMRY .. AVE J1 LAX .. KNZY:       Routing Summary

LINE 15     Column Headings:  
             CPT:     Checkpoint  
             FL:      Flight Level (Hundreds of feet)  
             TEMP:    Flight Level Temperature Difference from Standard  
                          (P = Above Standard)  
             WIND:    Wind Direction and Velocity (dddvv)  
             T/C:     True Course in Degrees  
             T/H:     True Heading in Degrees  
             M/H:     Magnetic Heading in Degrees and Tenths  
             TAS:     True Air Speed (knots)  
             G/S:     Ground Speed (knots)  
             ZD:      Zone Distance (Nautical Miles)  
             CD:      Cumulative Distance (Nautical Miles)  
             ETE:     Estimated Time En route (hours/minutes)  
             ETR:     Estimated Time Remaining (hours/minutes)  
             EFU:     Estimated Fuel Used in lbs  
             EFR:     Estimated Fuel Remaining in lbs

LINE 16     KMRY:     Point of Departure  
             4:        Flight Level (400 feet)  
             00:        Flight Level Temperature Difference from Standard  
             00000:    Wind Direction and Velocity  
             000:        True Course  
             000:        True Heading  
             \*\*\*\*\*: Magnetic Heading (Not Computed)  
             \*\*\*:        True Air Speed (Not Computed)  
             \*\*\*:        Ground Speed (Not Computed)  
             1:         Zone Distance (1 NM)  
             1:         Cumulative Distance (1 NM)  
             00/01:    Time En route (1 minute)  
             01/07:    Time Remaining (1 Hour/7 minutes)  
             600:        Fuel Used (600 lbs)  
             12800:    Fuel Remaining (12,800 lbs)

LINE 17     KMRY   N36353W121509:    Checkpoint with Coordinate  
                 N36353:        36 degrees   35.3 minutes   North Latitude  
                 W121509:    121 degrees   50.9 minutes   West longitude

[illegible]

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1)  FLIGHT PLAN FOR LT AVIATOR                                COMPUTED 06NOV2000 1511Z
2)  BASED UPON 2000110600   WEATHER DATA
3)  BASED UPON 06NOV2000-02DEC2000 AERONAUTICAL DATA
4)  LEG01 STANDARD KMRY      TO KNZY                          06NOV2000
5)  ACFT TYPE P3B99F5      DRAG: 156      EFF: 100      FUEL: JP-5

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# OPARS USER MANUAL

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6) PLANNED FOR ETD 2300Z INITIAL CRUISE FLIGHT LEVEL 290

7) FUEL TIME DIST ARRIVE RAMP LAND CARGO OPNLWT  
8) POA 4970 01/10 332 0010Z 86970 82000 0 72000  
9) ALT ...  
10) RES 10000 02/20  
11) TOT 14970 03/30

12) FUEL BIAS: 661 DBIAS: 0 ABIAS: 0 IBIAS: 0

13) ROUTING USED FOR THIS LEG  
14) KMRY .. AVE J1 LAX39 .. KNZY

15) TO FL T/C M/C WIND DFT G/S TAS DIS CUMD DISR ETE CUMT ETR EFR

16) KMRY 4 000 \*\*\*\*\* 00000 00 \*\*\* \*\*\* 1 1 331 00/01 00/01 01/09 4300

17) \*TOC\* 290 122 106 02559 R15 \*\*\* \*\*\* 93 94 238 00/21 00/22 00/48 12400

18) AVE 290 121 105 03055 R10 341 341 14 108 224 00/02 00/24 00/46 12300

19) AVE42 290 145 129 03646 R08 357 341 42 150 182 00/07 00/31 00/39 11800

20) REYES 290 145 129 04538 R07 348 340 30 180 152 00/05 00/36 00/34 11500

21) LAX39 290 147 131 05034 R06 343 339 17 197 135 00/03 00/39 00/31 11300

22) \*SDP\* 290 140 125 11023 R04 328 339 68 265 67 00/12 00/52 00/18 10600

23) KNZY 6 140 126 13509 00 \*\*\* \*\*\* 68 333 0 00/18 01/10 00/00 9900

24) KMRY N36353W121509 \*TOC\* N35458W120131 AVE N35388W119587

25) AVE42 N35044W119294 REYES N34395W119081 LAX39 N34256W118571

26) \*SDP\* N33337W118049 KNZY N32420W117129

27) \*TOC\* = TOP OF CLIMB  
28) \*SDP\* = START OF DESCENT POINT

29) TOTAL WIND FACTOR 3KTS

30) FL/FUEL/ETE (270/ 4900/01+09) (250/ 5000/01+09) (230/ 5100/01+10)

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## KNEEBOARD 3 (3KB) OUTPUT EXPLANATION

LINE 1 FLIGHT PLAN FOR: [Printed Label]  
LT AVIATOR: Pilot's Name  
COMPUTED 06NOV2000 1511Z: ZULU Date and Time Flight Plan Computed

LINE 2 BASED UPON 2000110600 WEATHER DATA  
2000: Year  
11: Month  
06: Day  
00: Synoptic Weather Hour from which Data Base was constructed

LINE 3 BASED UPON 06NOV2000-02DEC2000 AERONAUTICAL DATA:  
Effective dates of flight plan aeronautical data

# OPARS USER MANUAL

---

LINE 4      LEG01:            Leg Number  
             STANDARD:        Standard Leg  
             KMRY:            Point of Departure  
             TO KNZY:         Point of Arrival  
             06NOV2000:       Date of Departure

LINE 5      ACFT TYPE P3B99F5:    Aircraft Type and Configuration  
             DRAG: 156 : Drag Count (156)  
             EFF: 100 : Efficiency of Engine (100%)  
             FUEL: JP-5 : Fuel type used

LINE 6      PLANNED FOR ETD 2300Z:            Hour of Departure (ZULU)  
             INITIAL CRUISE FLIGHT LEVEL 290:    Initial Cruise at 29000 ft

LINE 7      Column Headings:  
             FUEL:    Fuel Weight in lbs  
             TIME:    Time in hours/minutes  
             DIST:    Distance in Nautical Miles  
             ARRIVE: Arrival Time (ZULU)  
             RAMP:    Ramp Weight in lbs  
             LAND:    Landing Weight in lbs  
             CARGO:    Cargo Weight in lbs  
             OPNLWT: Operational Weight of Aircraft in lbs

LINE 8      POA:        Fuel, Time, and Weight Calculations from Point of Departure  
                         to Point of Arrival  
             4970:    Fuel Required from POD TO POA  
             01/10:    En route Time  
             332:      Distance  
             0010Z:    Arrival Time (ZULU)  
             86970:    Total Ramp Weight  
             82000:    Landing Weight  
             0:        Amount of Cargo  
             72000:    Operational Weight

LINE 9      ALT:        Fuel and Time Calculations from Point of Arrival to  
                         Alternate Airport  
             ....:    ALT Not Requested

LINE 10     RES:        Reserve Fuel and Time Calculations  
             10000:    Reserve Fuel  
             02/20:    Reserve Time

LINE 11     TOT:        Total Fuel and Time Calculations  
             14970:    Total Fuel (En route + ALT + RES)  
             03/30:    Total Time (En route + ALT + RES)

LINE 12     FUEL BIAS: 661 : Fuel Required for Taxi and Takeoff (lbs)  
             DBIAS:        0 : Departure Bias Fuel (lbs)  
             ABIAS:        0 : Arrival Bias Fuel (lbs)  
             IBIAS:        0 : Ice Bias Fuel (lbs)

LINE 13     ROUTING USED FOR THIS LEG:    [Printed Label]

LINE 14     KMRY..AVE J1 LAX39..KNZY:    Routing Summary

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# OPARS USER MANUAL

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LINE 15      Column Headings:  
TO:          Checkpoint/Nav aids Name  
FL:          Flight Level (Hundreds of feet)  
T/C:        True Course in Degrees  
M/C:        Magnetic Course (Degrees and Tenths)  
WIND:       Wind Direction and Velocity (dddvv)  
DFT:        Degrees of Drift Left or Right. Drift Angle is an Average  
             Value Along the Track Between Checkpoints Based on Average  
             Wind Factor for Each Segment.  
G/S:        Ground Speed (knots)  
TAS:        True Air Speed (knots)  
DIS:        Distance to Point in Nautical Miles  
CUMD:       Cumulative Distance from POD  
DISR:       Distance Remaining (NM)  
ETE:        Estimated Time En route (hours/minutes)  
CUMT:       Cumulative Time (hours/minutes)  
ETR:        Estimated Time Remaining (hours/minutes)  
EFR:        Estimated Fuel Remaining (lbs)

LINE 16      KMR Y:    Point of Departure  
4:          Flight Level (400 ft)  
000:        True Course  
\*\*\*:        Magnetic Course (Not Computed)  
00000:      Wind Direction and Velocity  
00:         Drift Factor  
\*\*\*:        Ground Speed (Not Computed)  
\*\*\*:        True Air Speed (Not Computed)  
1:          Distance (1 NM)  
1:          Cumulative Distance (1 NM)  
331:        Distance Remaining (331 NM)  
00/01:      Time En route (1 minute)  
00/01:      Cumulative Time (1 minute)  
01/09:      Time Remaining (1 Hour/9 minutes)  
14300:      Fuel Remaining (14300 lbs)

LINE 17      \*TOC\*:    Top of Climb  
290:        Flight level (29000 ft)  
122:        True Course  
106:        Magnetic Course  
02559:      Wind Direction and Velocity  
R15:        Drift Factor (Right 15 Degrees)  
\*\*\*:        Ground Speed (Not Computed)  
\*\*\*:        True Air Speed (Not Computed)  
93:         Distance (93 NM)  
94:         Cumulative (94 NM)  
238:        Distance Remaining (238 NM)  
00/21:      Time En route (21 minutes)  
00/22:      Cumulative Time (22 minutes)  
00/48:      Time Remaining (48 minutes)  
12400:      Fuel Remaining (12400 lbs)

LINE 18    -    LINE 23    Covers Remaining Checkpoints and Point of Arrival

LINE 24      KMR Y    N36353W121509:    "To" Point with Coordinate  
             N36353:    36 degrees 35.3 minutes North Latitude  
             W121509:    121 degrees 50.9 minutes West Longitude

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# OPARS USER MANUAL

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\*TOC\* N35458W12031: "To" Point with Coordinate  
N35458: 35 degrees 45.8 minutes North Latitude  
W120131: 120 degrees 13.1 minutes West Longitude

AVE N35388W119587: "To" Point with Coordinate  
N35388: 35 degrees 38.8 minutes North Latitude  
W120587: 120 degrees 58.7 minutes West Longitude

LINE 25 - LINE 26: Covers Remaining Checkpoints and Point of Arrival

LINE 27 - TOP OF CLIMB IDENTIFICATION

LINE 28 - START DESCENT POINT IDENTIFICATION

LINE 29 TOTAL WIND FACTOR: 3 Kts: Wind Factor for the total leg  
in knots.

LINE 30 FL/FUEL/ETE: Alternate Flight Levels Information  
270/4900/01+09: Flight Level of 27000 feet Would Have Used 4900  
lbs of Fuel and Time of 1 Hour and 9 minutes.  
250/5000/01+09: Flight Level of 25000 feet Would Have Used 5000  
lbs of Fuel and Time of 1 Hour and 9 minutes.  
230/5100/01+10: Flight Level of 23000 feet Would Have Used 5100  
lbs of Fuel and Time of 1 Hour and 10 minutes.

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## B.5 KNEEBOARD 4 (4KB) OUTPUT EXAMPLE

```
1) FLIGHT PLAN FOR LT AVIATOR          COMPUTED 06NOV2000 2232Z
2) BASED UPON 2000110600 WEATHER DATA
3) BASED UPON 06NOV2000-02DEC2000 AERONAUTICAL DATA
4) LEG01 STANDARD KDEN TO KNGZ          06NOV2000
5) ACFT TYPE C9BPNF DRAG: 0 EFF: 100 FUEL: JP-5
6) PLANNED FOR ETD 1200Z INITIAL CRUISE FLIGHT LEVEL 280
7) FUEL TIME DIST ARRIVE RAMP LAND CARGO OPNLWT
8) POA 14941 02/23 831 1423Z 109998 95057 23767 65000
9) ALT 290 00/03 26 1426Z
10) RES 6000 00/59
11) TOT 21231 03/26
12) FUEL BIAS: 1323 DBIAS: 500 ABIAS: 500 IBIAS: 0
13) ROUTING USED FOR THIS LEG
14) KDEN .. DEN J80 SCK .. KNGZ
15) TO FREQ FL MC MH TAS GS ETE ETR DISR F/F EFU EFR
16) KDEN 0.0 54 ***** ***** *** ** 00/01 02/23 831 ***** 1300 19900
17) KDEN N39465W104527
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# OPARS USER MANUAL

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18)  DEN    117.0 60  331.7 323.2 *** *** 00/01 02/22 829  7800  0      19800
19)  DEN    N39480W104533

20)  *TOC*  0.0   280 242.3 254.4 *** *** 00/25 01/57 720  8500  3600  16100
21)  *TOC*  N39220W107112

22)  TRACI  ***** 280 242.0 246.3 435 370 00/10 01/47 657  5700  900   15100
23)  TRACI  N39071W108305

24)  GJT    112.4 280 240.1 254.1 434 372 00/02 01/44 643  5700  200   14900
25)  GJT    N39036W108475

26)  MLF    112.1 310 242.0 246.4 449 392 00/31 01/13 441  6000  3100  11800
27)  MLF    N38216W113008

28)  ILC    116.3 310 248.2 252.2 446 398 00/10 01/03 376  5500  900   10900
29)  ILC    N38150W114236

30)  OAL    117.7 310 247.7 250.7 445 413 00/23 00/40 216  5500  2100  8700
31)  OAL    N38002W117462

32)  TIOGA  ***** 310 250.1 252.6 443 424 00/11 00/29 138  5400  1000  7700
33)  TIOGA  N37560W119256

34)  *SDP*  0.0   310 249.3 252.3 442 428 00/03 00/26 117  5300  200   7400
35)  *SDP*  N37545W119528

36)  DUCKE  ***** 290 249.3 252.3 *** *** 00/02 00/24 107  3400  0      7400
37)  DUCKE  N37539W120060

38)  SCK    116.0 200 248.7 249.8 *** *** 00/08 00/16 56   2500  300   7000
39)  SCK    N37500W121102

40)  KNGZ   0.0   0   250.8 253.7 *** *** 00/16 00/00 2     2800  700   6200
41)  KNGZ   N37470W122190

42)  *TOC*  =   TOP OF CLIMB
43)  *SDP*  =   START DESCENT POINT

44)  ALTERNATE AIRPORT :KNUQ
45)  KNUQ   ***** 310 133.9 133.0 441 468 00/03 00/00 0     5300  200   5900
46)  KNUQ   N37249W122028

47)  TOTAL WIND FACTOR   -41KTS

48)  FL/FUEL/ETE   (280/ 15100/02+27) (260/ 15500/02+29) (240/ 15900/02+31)

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## KNEEBOARD 4 (4KB) OUTPUT EXPLANATION

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LINE  1  FLIGHT PLAN FOR:           [Printed Label]
          LT AVIATOR:               Pilot's Name
          COMPUTED 06NOV2000 2232Z: ZULU Date and Time Flight Plan Computed

LINE  2  BASED UPON 2000110600 WEATHER DATA

          2000:      Year
            11:      Month
            06:      Day
            00:      Synoptic Weather Hour from which Data Base was constructed.

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# OPARS USER MANUAL

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LINE 3    BASED UPON 06NOV2000-02DEC2000 AERONAUTICAL DATA:  
          Effective dates of flight plan aeronautical data

LINE 4    LEG01:            Leg Number  
          STANDARD:       Standard Leg  
          KDEN:           Point of Departure  
          KNGZ:           Point of Arrival  
          06NOV2000:      Date of Departure

LINE 5    ACFT TYPE C9BFNF:   Aircraft Type and configuration  
          DRAG:    0        Drag Count (0)  
          EFF:    100       Efficiency of Engine (100%)  
          FUEL: JP-5        Fuel type used

LINE 6    PLANNED FOR ETD 1200Z: Hour of Departure (ZULU)  
          INITIAL CRUISE FLIGHT LEVEL 280: Initial Cruise at 28000 ft

LINE 7    Column Headings:  
          FUEL:        Fuel Weight in lbs  
          TIME:        Time in hours/minutes  
          DIST:        Distance in Nautical Miles  
          ARRIVE:      Arrival Time (ZULU)  
          RAMP:        Ramp Weight in lbs  
          LAND:        Landing Weight in lbs  
          CARGO:       Cargo Weight in lbs  
          OPNLWT:      Operational Weight of Aircraft in lbs

LINE 8    POA:            Fuel, Time, and Weight Calculations from Point of Departure  
                          to Point of Arrival  
          14941:        Fuel Required from POD to POA  
          02/23:        En route Time  
          0831:        Distance  
          1423Z:        Arrival Time (ZULU)  
          109998:       Total Ramp Weight  
          95057:        Landing Weight  
          23767:        Amount of Cargo  
          65000:        Operational Weight

LINE 9    ALT:            Fuel and Time Calculations from Point of Arrival to  
                          Alternate Airport  
          290:          Fuel to ALT  
          00/03:        Time to ALT  
          26:           Distance  
          1426Z:        Arrival Time (ZULU)

LINE 10   RES:           Reserve Fuel and Time Calculations  
          6000:        Reserve Fuel  
          00/59:       Reserve Time

LINE 11   TOT:           Total Fuel and Time Calculations  
          21231:       Total Fuel (En route + ALT + RES)  
          03/26:       Total Time (En route + ALT + RES)

LINE 12   FUEL BIAS:   1323    : Fuel Required for Taxi and Takeoff (lbs)  
          DBIAS:        500    : Departure Bias Fuel (lbs)

# OPARS USER MANUAL

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ABIAS:            500 : Arrival Bias Fuel (lbs)  
IBIAS:            0 : Ice Bias Fuel (lbs)

LINE 13    ROUTING USED FOR THIS LEG:            [Printed Label]

LINE 14    KDEN .. DEN J80 SCK .. KNGZ:            Routing Summary

LINE 15    Column Headings:  
TO:            Checkpoint/Navaid Name  
FREQ:          Frequency  
FL:            Flight Level (Hundreds of feet)  
MC:            Magnetic Course (Degrees and Tenths)  
MH:            Magnetic Heading (Degrees and Tenths)  
TAS:           True Air Speed (knots)  
GS:            Ground Speed (knots)  
ETE:           Estimated Time En route (hours/minutes)  
ETR:           Estimated Time Remaining (hours/minutes)  
DISR:          Distance Remaining (NM)  
F/F:           Fuel Flow (lbs)  
EFU:           Estimated Fuel Used (lbs)  
EFR:           Estimated Fuel Remaining (lbs)

LINE 16    KDEN:            Point of Departure  
0.0:           No Frequency Available  
54:            Flight Level (5400 ft)  
\*\*\*\*\*:       Magnetic Course (Not Computed)  
\*\*\*\*\*:       Magnetic Heading (Not Computed)  
\*\*\*:           True Air Speed (Not Computed)  
\*\*\*:           Ground Speed (Not Computed)  
00/01:        Time En route (1 minute)  
02/23:        Time Remaining (2 hours 23 minutes)  
831:           Distance Remaining (831 NM)  
\*\*\*\*\*:       Fuel Flow (Not Computed)  
1300:          Estimated Fuel Used (1300 lbs)  
19900:        Estimated Fuel Remaining (19,900 lbs)

LINE 17    N39465W104527:            Coordinates  
N39465:                39 degrees 46.5 minutes North Latitude  
W104527:               104 degrees 52.7 minutes West Longitude

LINE 18    DEN:            Checkpoint Name  
117.0:          Frequency  
60:            Flight Level (6000 ft)  
331.7:          Magnetic Course  
323.2:          Magnetic Heading  
\*\*\*:           True Air Speed (Not Computed)  
\*\*\*:           Ground Speed (Not Computed)  
00/01:        Time En route (1 minute)  
02/22:        Time Remaining (2 hours 22 minutes)  
829:           Distance Remaining (829 NM)  
7800:          Fuel Flow (7800 lbs)  
0:            Estimated Fuel Used ( < 100 lbs)  
19800:        Estimated Fuel Remaining (19,800 lbs)

LINE 19    N39480W104533:            Coordinates  
N39480:               39 degrees 48.0 minutes North Latitude

# OPARS USER MANUAL

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W104533: 104 degrees 53.3 minutes West Longitude

LINE 20 - LINE 41: Covers Remaining Checkpoints and Point of Arrival

LINE 42 TOP OF CLIMB IDENTIFICATION

LINE 43 START DESCENT POINT IDENTIFICATION

LINE 44 ALTERNATE AIRPORT:KNUQ: Line 44-46 will only appear if an  
and 45 Alternate Airport was specified.  
and 46 Format for Line 45 and 46 is the same as  
rest of the checkpoints (Lines 16-41).

LINE 47 TOTAL WIND FACTOR -41 Kts: Wind Factor for the Total Leg in knots.

LINE 48 FL/FUEL/ETE: Alternate Flight Levels Information  
280/15100/02+27: Flight Level of 28000 feet Would Have Used 15,100  
lbs of Fuel and Time of 2 hours 27 minutes.  
260/15500/02+29: Flight Level of 26000 feet Would Have Used 15,500  
lbs of Fuel and Time of 2 hours 29 minutes.  
240/15900/02+31: Flight Level of 24000 feet Would Have Used 15,900  
lbs of Fuel and Time of 2 hours 31 minutes.

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## B.6 KNEEBOARD 5 (5KB) OUTPUT EXAMPLE

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1) FLIGHT PLAN FOR LT AVIATOR COMPUTED 06NOV2000 2232Z

2) BASED UPON 2000110600 WEATHER DATA

3) BASED UPON 06NOV2000-02DEC2000 AERONAUTICAL DATA

4) LEG01 STANDARD KMRY TO KNUW 06NOV2000

5) ACFT TYPE UC12BFNF DRAG: 0 EFF: 100 FUEL: JP-5

6) PLANNED FOR ETD 1200Z INITIAL CRUISE FLIGHT LEVEL 220

7)	FUEL	TIME	DIST	ARRIVE	RAMP	LAND	CARGO	OPNLWT
8)	POA	1614	03/39	713	1538Z	10814	9200	0 8600
9)	ALT	...						
10)	RES	600	01/04					
11)	TOT	2214	04/43					

12) FUEL BIAS: 100 DBIAS: 0 ABIAS: 0 IBIAS: 0

13) ROUTING USED FOR THIS LEG

14) KMRY .. OAK J1 OED J126 OLM .. KNUW

15)	TO	DST	MC	FL	WIND	DFT	TAS	G/S	CUMD	ETE	ETR	F/F	EFR
16)	KMRY	0	*****	4	00000	00	***	***	0	00/01	03/38	*****	2113
17)	*TOC*	26	329.1	220	32524	R03	***	***	26	00/10	03/28	724	1990
18)	OAK	45	328.2	220	32025	R02	211	189	71	00/14	03/13	419	1890
19)	*ITC*	17	343.3	310	33052	R08	***	***	88	00/10	03/04	595	1794

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# OPARS USER MANUAL

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20) RBL 125 341.8 310 32052 R08 228 183 213 00/41 02/23 383 1531  
21) OED 146 328.9 310 30546 R07 225 183 359 00/48 01/35 368 1238  
22) EUG 99 332.2 310 29042 R09 224 196 458 00/30 01/04 362 1053  
23) UBG 75 347.0 310 28039 R10 224 215 533 00/21 00/43 362 927  
24) \*SDP\* 86 341.4 310 27040 R10 224 218 619 00/24 00/20 362 783  
25) OLM 11 339.9 250 26034 R07 \*\*\* \*\*\* 630 00/02 00/17 311 771  
26) KNUW 83 346.4 0 14010 L01 \*\*\* \*\*\* 713 00/17 00/00 607 594  
27) KMRY N36353W121508 \*TOC\* N37003W121590 OAK N37435W122134  
28) \*ITC\* N38008W122135 RBL N40059W122141 OED N42288W122547  
29) EUG N44073W123133 UBG N45212W122587 \*SDP\* N46476W122546  
30) OLM N46583W122541 KNUW N48211W122392  
31) \*TOC\* = TOP OF CLIMB  
32) \*SDP\* = START DESCENT POINT  
33) \*ITC\* = IMMEDIATE TOP OF CLIMB  
34) TOTAL WIND FACTOR -22KTS  
35) FL/FUEL/ETE (280/ 1600/03+43) (260/ 1600/03+31) (240/ 1600/03+33)

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## KNEEBOARD 5 (5KB) OUTPUT EXPLANATION

LINE 1 FLIGHT PLAN FOR: [Printed Label]  
LT AVIATOR: Pilot's Name  
COMPUTED 06NOV2000 2232Z: ZULU Date and Time Flight Plan Computed

LINE 2 BASED UPON 2000110600Z WEATHER DATA  
2000: Year  
11: Month  
06: Day  
00: Synoptic Weather Hour from which Data Base was constructed

LINE 3 BASED UPON 06NOV2000-02DEC2000 AERONAUTICAL DATA:  
Effective dates of flight plan aeronautical data

LINE 4 LEG01: Leg Number  
STANDARD: Standard Leg  
KMRY: Point of Departure  
TO KNUW: Point of Arrival  
06NOV2000: Date of Departure

LINE 5 ACFT TYPE UC12BFNF: Aircraft Type and Configuration  
DRAG: 0 : Drag Count (0)  
EFF: 100 : Efficiency of Engine (100%)  
FUEL: JP-5 : Fuel type used

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LINE 6      PLANNED FOR ETD 1200Z:      Hour of Departure (ZULU)
            Initial Cruise Flight Level 220:  Initial Cruise at 22000 ft

LINE 7      Column Headings:
            FUEL:    Fuel Weight in lbs
            TIME:    Time in hours/minutes
            DIST:    Distance in Nautical Miles
            ARRIVE:  Arrival Time (ZULU)
            RAMP:    Ramp Weight in lbs
            LAND:    Landing Weight in lbs
            CARGO:   Cargo Weight in lbs
            OPNLWT:  Operational Weight of Aircraft in lbs

LINE 8      POA:      Fuel, Time, and Weight Calculations from Point of Departure
                   to Point of Arrival
            1614:    Fuel Required from POD to POA
            03/39:   En route Time
            713:     Distance
            1538Z:   Arrival Time (ZULU)
            10814:   Total Ramp Weight
            9200:    Landing Weight
            0:       Amount of Cargo
            8600:    Operational Weight

LINE 9      ALT:      Fuel and Time Calculations from Point of Arrival to Alternate
                   Airport

LINE 10     RES:      Reserve Fuel and Time Calculations
            600:     Reserve Fuel
            01/04:   Reserve Time

LINE 11     TOT:      Total Fuel and Time Calculations
            2214:    Total Fuel (En route + ALT + RES)
            04/43:   Total Time (En route + ALT + RES)

LINE 12     FUEL BIAS: 100 :Fuel required for Taxi and Takeoff (lbs)
            DBIAS:     0 :Departure Bias Fuel (lbs)
            ABIAS:     0 :Arrival Bias Fuel (lbs)
            IBIAS:     0 :Ice Bias Fuel (lbs)

LINE 13     ROUTING USED FOR THIS LEG:      [Printed Label]

LINE 14     KMRY .. OAK J1 OED J126 OLM .. KNZY:  Routing Summary

LINE 15     Column Headings:
            TO:       Checkpoint/Navaid Name
            DST:      Distance to Point in Nautical Miles
            MC:       Magnetic Course (Degrees and Tenths)
            FL:       Flight Level (Hundreds of feet)
            WIND:     Wind Direction and Velocity in the Form dddvv Wind is a Spot
                   Value at Each Checkpoint
            DFT:      Degrees of Drift Left or Right. Drift Angle is an Average Value
                   along the Track between Checkpoints Based on Average Wind
                   Factor for Each Segment.
            TAS:      True Air Speed (knots)

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# OPARS USER MANUAL

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G/S: Ground Speed (knots)  
CUMD: Cumulative Distance from POD  
ETE: Estimated Time En route (hours/minutes)  
ETR: Estimated Time Remaining (hours/minutes)  
F/F: Fuel Flow (lbs)  
EFR: Estimated Fuel Remaining (lbs)

LINE 16      KMRY:    Point of Departure  
             0:        Distance  
             \*\*\*\*\*: Magnetic Course (Not Computed)  
             4:        Flight Level (400 feet)  
             00000: Wind Direction and Velocity  
             00:        Drift Factor  
             \*\*\*:      True Air Speed (Not Computed)  
             \*\*\*:      Ground Speed (Not Computed)  
             0:        Cumulative Distance  
             00/01: Time En route (1 minute)  
             03/38: Time Remaining (3 hours/38 minutes)  
             \*\*\*\*\*: Fuel Flow (Not Computed)  
             2113:    Fuel Remaining (2113 lbs)

LINE 17      \*TOC\*:    Top of Climb  
             26:        Distance (26 NM)  
             329.1: Magnetic Course  
             220:        Flight Level (22000 feet)  
             32524: Wind Direction and Velocity  
             R03:        Drift Factor (Right 03 Degrees)  
             \*\*\*:      True Air Speed (Not Computed)  
             \*\*\*:      Ground Speed (Not Computed)  
             26:        Cumulative Distance (26 NM)  
             00/10: Time En route (10 minutes)  
             03/28: Time Remaining (3 hours/28 minutes)  
             724:        Fuel Flow (724 lbs)  
             1990:    Fuel Remaining(1990 lbs)

LINE 18 - LINE 26:    Covers Remaining Checkpoints and Point of Arrival

LINE 27      KMRY    N36353W121508:    "To" Point with Coordinates  
                             N36353:    36 degrees 35.3 minutes North Latitude  
                             W121508:    121 degrees 50.8 minutes Longitude  
  
             \*TOC\*    N37003W121590:    "To" Point with Coordinate  
                             N37003:    37 degrees 00.3 minutes North Latitude  
                             W121590:    121 degrees 59.0 minutes West Longitude  
  
             OAK      N37435W122134:    "To" Point with Coordinate  
                             N37435:    37 degrees 43.5 minutes North Latitude  
                             W122134:    122 degrees 13.4 minutes West Longitude

LINE 28 - LINE 30:    Covers Remaining Checkpoints and Point of Arrival

LINE 31      TOP OF CLIMB IDENTIFICATION

LINE 32      START DESCENT POINT IDENTIFICATION

LINE 33      IMMEDIATE TOP OF CLIMB IDENTIFICATION

LINE 34 TOTAL WIND FACTOR: -22 KTS: Wind Factor for the Total Leg in knots

LINE 35 FL/FUEL/ETE: Alternate Flight Levels Information

280/1600/03+43: Flight Level of 28000 feet Would Have Used 1600 lbs  
of Fuel and Time of 3 hours and 43 minutes.

260/1600/03+31: Flight Level of 26000 feet Would Have Used 1600 lbs  
of Fuel and Time of 3 hours and 31 minutes.

240/1600/03+33: Flight Level of 24000 feet Would Have Used 1600 lbs  
of Fuel and Time of 3 hours and 33 minutes.

1)	FLIGHT PLAN FOR LT AVIATOR						COMPUTED 06NOV2000 1800Z			
2)	BASED UPON 2000110600 WEATHER DATA									
3)	BASED UPON 06NOV2000-02DEC2000 AERONAUTICAL DATA									
4)	LEG01 STANDARD KMRY		TO KNZY		06NOV2000					
5)	ACFT TYPE A6AFNF		DRAG: 0		EFF: 100		FUEL: JP-5			
6)	PLANNED FOR ETD 2200Z				INITIAL CRUISE FLIGHT LEVEL 370					
7)		FUEL	TIME	DIST	ARRIVE	RAMP	LAND	CARGO	OPNLWT	
8)	POA	2700	00/56	331	2256Z	32100	29400	0	28300	
9)	ALT	...								
10)	RES	1100	00/22							
11)	TOT	3800	01/18							
12)	FUEL BIAS: 333		DBIAS: 0		ABIAS: 0		IBIAS: 0			
13)	ROUTING USED FOR THIS LEG									
14)	KMRY .. AVE J1 LAX .. KNZY									
15)	NAV	MHD	ETE	ETA	EFU	EFR	C LAT	FL	OAT	TC
16)	CHAN	D	ETR	ATA	AFU	AFR	P LONG	VAR	WIND	TAS
17)	KMRY	*****	00/01	2201	300	3400	N36353	12	015	000
18)	***	0	00/55	_____	_____	_____	W121509	***	00000	***
19)	*TOC*	99	00/06	2207	900	2500	N36134	370	-50	122
20)	****	41	00/49	_____	_____	_____	W121072	16E	34084	***
21)	AVE	98	00/09	2215	300	2100	N35388	370	-47	122
22)	118	65	00/41	_____	_____	_____	W119587	16E	33580	398
23)	DERBB	127	00/04	2219	100	2000	N35153	370	-47	145
24)	****	29	00/37	_____	_____	_____	W119385	15E	33578	398
25)	REYES	120	00/06	2224	200	1700	N34395	370	-46	145
26)	****	44	00/32	_____	_____	_____	W119081	15E	33075	398
27)	LAX33	131	00/03	2227	100	1600	N34205	370	-45	147
28)	****	23	00/29	_____	_____	_____	W118529	15E	33074	398
29)	*SDP*	121	00/01	2228	0	1600	N34171	370	-45	138
30)	****	5	00/28				W118491	15E	33073	397

# OPARS USER MANUAL

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31)  LAX    119    00/05 2232 0      1500      N33560 280 -38   138
32)  83     28     00/24 _____ W118259 15E 33066 ***

33)  KNZY   125    00/24 2256 400    1000      N32420 0   007   140
34)  ****   96     00/00 _____ W117129 13E 33015 ***

35)  *TOC*   =   TOP OF CLIMB

36)  *SDP*   =   START DESCENT POINT

37)  TOTAL WIND FACTOR      69 KTS

38)  FL/FUEL/ETE  (330/  2800/00+58) (290/  2900/00+59) (270/  2900/01+00)
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## TACTICAL (TAC) OUTPUT EXPLANATION

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```
LINE  1  FLIGHT PLAN FOR:           [Printed Label]
          LT AVIATOR:               Pilot's Name (If given)
          COMPUTED 06NOV2000 1800Z: ZULU Date and Time Flight Plan Computed.

LINE  2  BASED UPON 2000110600 WEATHER DATA
          2000:   Year
          11:    Month
          06:    Day
          00:    Synoptic Weather Hour from which Data Base was constructed.

LINE  3  BASED UPON 06NOV2000-02DEC2000 AERONAUTICAL DATA:
          Effective dates of flight plan aeronautical data

LINE  4  LEG01:      Leg Number
          STANDARD:   Standard Leg
          KMRY:       Point of Departure
          KNZY:       Point of Arrival
          06NOV2000:  Date of Departure

LINE  5  ACFT TYPE A6AFNF: Aircraft Type and Configuration
          DRAG:   0   : Drag Count
          EFF:  100 : Efficiency of Engine (100%)
          FUEL: JP-5 : Fuel type used

LINE  6  PLANNED FOR ETD 2200Z:  Hour of Departure (ZULU)
          INITIAL CRUISE FLIGHT LEVEL 370:  Initial Cruise at 37000 ft

LINE  7  Column Headings
          FUEL:      Fuel Weight in lbs
          TIME:      Time in hours/minutes
          DIST:      Distance in Nautical Miles
          ARRIVE:    Arrival Time (ZULU)
          RAMP:      Ramp Weight in lbs
          LAND:      Landing Weight in lbs
          CARGO:     Cargo Weight in lbs
          OPNLWT:    Operational Weight of Aircraft in lbs
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# OPARS USER MANUAL

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LINE 8 POA: Fuel, Time, and Weight Calculations from Point of Departure to Point of Arrival  
2700: Fuel required from POD to POA  
00/56: En route Time  
331: Distance  
2256Z: Arrival Time (ZULU)  
32100: Total RAMP Weight  
29400: Landing Weight  
0: Amount of Cargo  
28300: Operational Weight

LINE 9 ALT: Fuel and Time Calculations from Point of Arrival to Alternate Airport. (If given)

LINE 10 RES: Reserve Fuel and time Calculation  
1100: Reserve Fuel  
00/22: Reserve Time

LINE 11 TOT: Total Fuel and Time Calculations  
3800: Total Fuel (En route + ALT + RES)  
01/18: Total Time (En route + ALT + RES)

LINE 12 FUEL BIAS: 333: Fuel Required for Taxi and Takeoff (lbs)  
DBIAS: 0 : Departure Bias Fuel (lbs)  
ABIAS: 0 : Arrival Bias Fuel (lbs)  
IBIAS: 0 : Ice Bias Fuel (lbs)

LINE 13 ROUTING USED THIS LEG: [Printed Label]

LINE 14 KMRY..AVE J1 LAX.. KNZY: Routing Summary

LINES 15 - 16 Column Headings  
NAV: Navigation Checkpoint Identification  
CHAN: Tacan Channel  
MHD: Magnetic Heading  
D: Distance to Checkpoint  
ETE: Estimated Time En route  
ETR: Estimated Time Remaining to POA  
ETA: Estimated Time of Arrival (ZULU)  
ATA: Actual Time of Arrival (Filled in by Flight Crew, Real Time)  
EFU: Estimated Fuel Used (lbs)  
AFU: Actual Fuel Used (Filled in by Flight Crew, Real Time Actual Fuel Used)  
EFR: Estimated Fuel Remaining (lbs)  
AFR: Actual Fuel Remaining (Filled in by Flight Crew, Real Time Actual Fuel Used)  
CP: Checkpoint Location (Filled in by Flight Crew, Preflight)  
LAT: Latitude of Checkpoint  
LONG: Longitude of Checkpoint  
FL: Flight Level (in hundreds of feet)  
VAR: Magnetic Variation  
OAT: Outside Air Temperature (degrees Celsius)  
WIND: Wind Direction and Velocity  
TC: True Course  
TAS: True Air Speed (knots)

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# OPARS USER MANUAL

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LINES 17 - 18

KMRY: Point of Departure  
\*\*\*\*: Tacan Channel (Not Computed)  
\*\*\*: Magnetic Heading (Not Computed)  
0: Distance  
00/01: Time En route (1 minute)  
00/55: Time Remaining (55 minutes)  
2201: Estimated Time of Arrival  
----: Actual Time of Arrival (Filled in by Flight Crew)  
300: Estimated Fuel Used (300 lbs)  
----: Actual Fuel Used (Filled in by Flight Crew)  
3400: Estimated Fuel Remaining (3400 lbs)  
----: Actual Fuel Remaining (Filled in by Flight Crew)  
CP: Checkpoint Location  
(Filled in by Flight Crew)  
N36353: Latitude  
W121509: Longitude  
12: Flight level (1200 ft)  
\*\*\*: Magnetic Variation (Not Computed)  
015: Air Temperature (15 degrees Celsius)  
00000: Wind Direction & Velocity  
000: True Course  
\*\*\*: True Air Speed (Not Computed)

LINES 19 - LINES 34 Covers Remaining Checkpoints and Point of Arrival

LINE 35 Top of Climb Identification

LINE 36 Start Descent Point Identification

LINE 37 Total Wind Factor 69 kts: Wind Factor for the total leg in knots

LINE 38 FL/FUEL/ETE: Alternate Flight Levels Information

330/2800/00+58: Flight Level 33000 ft would have used 2800 lbs of fuel  
and time of 58 minutes

290/2900/00+59: Flight Level 29000 ft would have used 2900 lbs of fuel  
and time of 59 minutes

270/2900/01+00: Flight Level 27000 ft would have used 2900 lbs of fuel  
and time of 1 hour

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## B.8 USAF-70 OUTPUT EXAMPLE

1) FLIGHT PLAN FOR PILOT COMPUTED 06NOV2000 2300Z  
2) BASED UPON 2000110600 WEATHER DATA  
3) BASED UPON 06NOV2000-02DEC2000 AERONAUTICAL DATA  
4) LEG01 STANDARD KNGU TO KNIP 06NOV2000  
5) ACFT TYPE EA6BFNF DRAG: 0 EFF: 100 FUEL: JP-5

# OPARS USER MANUAL

6) PLANNED FOR ETD 1700Z INITIAL CRUISE FLIGHT LEVEL 350

7) FUEL TIME DIST ARRIVE RAMP LAND CARGO OPNLWT  
8) POA 4968 01/43 486 1843Z 40670 35700 0 34300  
9) ALT ...  
10) RES 1400 00/21  
11) TOT 6370 02/04

12) FUEL BIAS: 333 DBIAS: 0 ABIAS: 0 IBIAS: 0

13) ROUTING USED FOR THIS LEG  
14) KNGU .. WEAVR J121 MILIE .. KNIP

15) FIX	CH	LAT	MAG	DIST	GND	ETE	ETA/ATA	FUEL	ACTUAL
16) ROUTE	FREQ	LONG	CRS		SPD	ETR			FUEL
17) KNGU	***	N36562	*****	0	***	00/01		333	
18) START	*****	W076174	486			01/42		6037	
19) *TOC*	***	N36225	219.8	40	396	00/06		1243	
20) ..	*****	W076438		446		01/36		4794	
21) WEAVR	***	N35512	221.5	37	297	00/07		308	
22) ..	*****	W077081		409		01/28		4486	
23) ISO	33	N35223	220.5	36	291	00/07		302	
24) J121	109.6	W077335		374		01/21		4184	
25) JMACK	***	N33593	227.5	108	282	00/23		940	
26) J121	*****	W078580		266		00/58		3244	
27) CHS	82	N32537	224.3	85	279	00/18		731	
28) J121	113.5	W080023		181		00/40		2514	
29) *SDP*	***	N31447	216.7	81	285	00/17		674	
30) J121	*****	W080524		100		00/22		1840	
31) MILIE	***	N31199	216.8	29	310	00/06		94	
32) J121	*****	W081103		71		00/17		1746	
33) KNIP	***	N30141	206.4	71	252	00/17		344	
34) STOP	*****	W081408		0		00/00		1402	

35) \*TOC\* = TOP OF CLIMB  
36) \*SDP\* = START DESCENT POINT

37) TOTAL WIND FACTOR -11KTS

38) ADDITIONAL ALTITUDE DATA  
39) FL/FUEL/ETE (390/ 5200/01+46) (310/ 5200/01+43) (280/ 5400/01+43)

# OPARS USER MANUAL

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## USAF-70 OUTPUT EXPLANATION

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LINE 1 FLIGHT PLAN FOR: [Printed Label]  
PILOT: Pilot's Name  
COMPUTED 06NOV2000 2300Z: ZULU Date and Time Flight Plan Computed

LINE 2 BASED UPON 2000110600Z WEATHER DATA  
2000: Year  
11: Month  
06: Day  
00: Synoptic Weather Hour from which Data Base was constructed

LINE 3 BASED UPON 06NOV2000-02DEC2000 AERONAUTICAL DATA:  
Effective dates of flight plan aeronautical data

LINE 4 LEG01: Leg Number  
STANDARD: Standard Leg  
KNGU: Point of Departure  
TO KNIP: Point of Arrival  
06NOV2000: Date of Departure

LINE 5 ACFT TYPE EA6BFNF: Aircraft Type and Configuration  
DRAG: 0 : Drag Count (0)  
EFF: 100 : Efficiency of Engine (100%)  
FUEL: JP-5 : Fuel type used

LINE 6 PLANNED FOR ETD 1700Z: Hour of Departure (ZULU)  
Initial Cruise Flight Level 350: Initial Cruise at 35000 ft

LINE 7 Column Headings:  
FUEL: Fuel Weight in lbs  
TIME: Time in hours/minutes  
DIST: Distance in Nautical Miles  
ARRIVE: Arrival Time (ZULU)  
RAMP: Ramp Weight in lbs  
LAND: Landing Weight in lbs  
CARGO: Cargo Weight in lbs  
OPNLWT: Operational Weight of Aircraft in lbs

LINE 8 POA: Fuel, Time, and Weight Calculations from Point of Departure  
to Point of Arrival  
4968: Fuel Required from POD to POA  
01/43: En route Time  
486: Distance  
1843Z: Arrival Time (ZULU)  
40670: Total Ramp Weight  
35700: Landing Weight  
0: Amount of Cargo  
34300: Operational Weight

LINE 9 ALT: Fuel and Time Calculations from Point of Arrival to  
Alternate Airport

LINE 10 RES: Reserve Fuel and Time Calculations  
1400: Reserve Fuel  
00/21: Reserve Time

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# OPARS USER MANUAL

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LINE 11      TOT:      Total Fuel and Time Calculations  
6370:      Total Fuel (En route + ALT + RES)  
02/04:      Total Time (En route + ALT + RES)

LINE 12      FUEL BIAS:    333    :Fuel required for Taxi and Takeoff (lbs)  
DBIAS:            0    :Departure Bias Fuel (lbs)  
ABIAS:            0    :Arrival Bias Fuel (lbs)  
IBIAS:            0    :Ice Bias Fuel (lbs)

LINE 13      ROUTING USED FOR THIS LEG:                      [Printed Label]

LINE 14      KNGU .. WEA VR J121 MILIE .. KNIP:      Routing Summary

LINE 15      Column Headings:  
FIX:              Checkpoint/Navaid Name  
CH:               Channel  
LAT:              Latitude (Degrees, minutes, Tenths of minutes)  
MAG:              Magnetic Course (Degrees and Tenths)  
DIST:             Distance from last Fix and Distance Remaining (Nautical  
Miles)  
GND:              Ground Speed (knots)  
ETE:              Estimated Time En route (hours/minutes)  
ETA/ATA:          Estimated Time Arrival/Actual Time Arrival  
(hours/minutes)  
FUEL:             Fuel from last Fix and Fuel Remaining (lbs)  
ACTUAL:           Actual Fuel (lbs)

LINE 16      Column Headings:  
ROUTE:            Routing to Fix  
FREQ:             Frequency  
LONG:             Longitude (Degrees, minutes, Tenths of minutes)  
CRS:              Magnetic Course (Degrees and Tenths)  
BLANK:             
SPD:              Ground Speed (knots)  
ETR:              Estimated Time Remaining  
BLANK:             
BLANK:             
FUEL:             Actual Fuel (lbs)

LINE 17      KNGU:      Point of Departure  
\*\*\*:              Channel (Not Applicable)  
N36562: Latitude  
\*\*\*\*\*: Magnetic Course (Not Applicable)  
0:                Distance from last Fix (0 NM)  
\*\*\*:              Ground Speed (Not Applicable)  
00/01:            Time from last Fix (1 minute)  
BLANK:            Space for crew to write in Estimated Time of Arrival  
333:              Fuel from last Fix (333 lbs)  
BLANK:            Space for crew to write in Actual Fuel used

LINE 18      START:      Point of Departure  
\*\*\*:               
W076174: Longitude  
BLANK:             
486:              En route Distance (486 NM)

# OPARS USER MANUAL

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BLANK:  
01/42: Time Remaining (1 Hour, 42 minutes)  
BLANK: Space for crew to write in Actual Time of Arrival  
6037: Fuel Remaining (6037 lbs)  
BLANK: Space for crew to write in Actual Fuel used

LINE 19 - LINE 22: Covers Top of Climb and another Checkpoint

LINE 23 ISO: Checkpoint on Route  
33: Channel  
N35223: Latitude  
220.5: Magnetic Course (Not Applicable)  
36: Distance from last Fix (36 NM)  
291: Ground Speed (291 knots)  
00/07: Time from last Fix (7 minutes)  
BLANK: Space for crew to write in Estimated Time of Arrival  
302: Fuel from last Fix (302 lbs)  
BLANK: Space for crew to write in Actual Fuel used

LINE 24 J121: Routing to Checkpoint  
109.6: Frequency  
W077335: Longitude  
BLANK:  
374: En route Distance (374 NM)  
BLANK:  
01/21: Time Remaining (1 Hour, 21 minutes)  
BLANK: Space for crew to write in Actual Time of Arrival  
4184: Fuel Remaining (4184 lbs)  
BLANK: Space for crew to write in Actual Fuel used

LINE 25 - LINE 34: Covers Remaining Checkpoints, Start of Descent Point  
and Point of Arrival

LINE 35 TOP OF CLIMB IDENTIFICATION

LINE 36 START DESCENT POINT IDENTIFICATION

LINE 37 TOTAL WIND FACTOR: -11 KTS: Wind Factor for the Total Leg in knots

LINE 38 FL/FUEL/ETE: Alternate Flight Levels Information  
390/5200/01+46: Flight Level of 39000 feet Would Have Used 5200 lbs  
of Fuel and Time of 1 Hour and 46 minutes.  
310/5200/01+43: Flight Level of 31000 feet Would Have Used 5200 lbs  
of Fuel and Time of 1 Hour and 43 minutes.  
280/5400/01+43: Flight Level of 28000 feet Would Have Used 5400 lbs of Fuel and  
Time of 1 Hour and 43 minutes.

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## B.9 USAF-077 OUTPUT EXAMPLE

- 1) FLIGHT PLAN FOR PILOT COMPUTED 06NOV2000 2300Z
- 2) BASED UPON 2000110600 WEATHER DATA
- 3) BASED UPON 06NOV2000-02DEC2000 AERONAUTICAL DATA

# OPARS USER MANUAL

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4) LEG01 STANDARD KNGU TO KNIP 06NOV2000

5) ACFT TYPE EA6B FNF DRAG: 0 EFF: 100 FUEL: JP-5

6) PLANNED FOR ETD 1700Z INITIAL CRUISE FLIGHT LEVEL 350

7) FUEL TIME DIST ARRIVE RAMP LAND CARGO OPNLWT

8) POA 4968 01/43 486 1843Z 40670 35700 0 34300

9) ALT ...

10) RES 1400 00/21

11) TOT 6370 02/04

12) FUEL BIAS: 333 DBIAS: 0 ABIAS: 0 IBIAS: 0

13) ROUTING USED FOR THIS LEG

14) KNGU .. WEA VR J121 MILIE .. KNIP

15) FIX	FREQ	LATITUDE	TC	W/V	TH DIST	GND	ETE	(PETA)	FUEL
16) ROUTE	CH	LONGITUDE	MC	DCA	MH REMN	SPD	REMN	ETA	
17) KNGU	*****	N36562	***	00000	***	0	***	00/01	333
18) START	***	W076174	*****	00	*****	486		01/42	6037
19) *TOC*	*****	N36225	212	30023	214	40	396	00/06	1243
20) ..	***	W076438	219.8	L02	221.7	446		01/36	4794
21) WEA VR	*****	N35512	212	29027	215	37	297	00/07	308
22)	***	W077081	221.5	L02	223.9	409		01/28	4486
23) ISO	109.6	N35223	216	28530	218	36	291	00/07	302
24) J121	33	W077335	220.5	L03	223.2	374		01/21	4184
25) JMACK	*****	N33593	220	27033	223	108	282	00/23	940
26) J121	***	W078580	227.5	L03	230.1	266		00/58	3244
27) CHS	113.5	N32537	219	27030	222	85	279	00/18	731
28) J121	82	W080023	224.3	L02	226.6	181		00/40	2514
29) *SDP*	*****	N31447	212	27026	214	81	285	00/17	674
30) J121	***	W080524	216.7	L02	219.0	100		00/22	1840
31) MLLXZ	*****	N31199	212	26516	213	29	310	00/06	94
32) J121	***	W081103	216.8	L01	217.8	71		00/17	1746
33) KNIP	*****	N30141	202	10017	200	71	252	00/17	344
34) STOP	***	W081408	206.4	R02	204.8	0		00/00	1402
35) *TOC*	=	TOP OF CLIMB							
36) *SDP*	=	START DESCENT POINT							
37) TOTAL WIND FACTOR	-11KTS								
38) ADDITIONAL ALTITUDE DATA									
39) FL/FUEL/ETE	(390/	5200/01+46)	(310/	5200/01+43)	(280/	5400/01+43)			

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# OPARS USER MANUAL

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## USAF-077 OUTPUT EXPLANATION

LINE 1 FLIGHT PLAN FOR: [Printed Label]  
PILOT: Pilot's Name  
COMPUTED 06NOV2000 2300Z: ZULU Date and Time Flight Plan Computed

LINE 2 BASED UPON 2000110600Z WEATHER DATA  
2000: Year  
11: Month  
06: Day  
00: Synoptic Weather Hour from which Data Base was constructed

LINE 3 BASED UPON 06NOV2000-02DEC2000 AERONAUTICAL DATA:  
Effective dates of flight plan aeronautical data

LINE 4 LEG01: Leg Number  
STANDARD: Standard Leg  
KNGU: Point of Departure  
TO KNIP: Point of Arrival  
06NOV2000: Date of Departure

LINE 5 ACFT TYPE EA6BFNF: Aircraft Type and Configuration  
DRAG: 0 : Drag Count (0)  
EFF: 100 : Efficiency of Engine (100%)  
FUEL: JP-5 : Fuel type used

LINE 6 PLANNED FOR ETD 1700Z: Hour of Departure (ZULU)  
Initial Cruise Flight Level 350: Initial Cruise at 35000 ft

LINE 7 Column Headings:  
FUEL: Fuel Weight in lbs  
TIME: Time in hours/minutes  
DIST: Distance in Nautical Miles  
ARRIVE: Arrival Time (ZULU)  
RAMP: Ramp Weight in lbs  
LAND: Landing Weight in lbs  
CARGO: Cargo Weight in lbs  
OPNLWT: Operational Weight of Aircraft in lbs

LINE 8 POA: Fuel, Time, and Weight Calculations from Point of Departure  
to Point of Arrival  
4968: Fuel Required from POD to POA  
01/43: En route Time  
486: Distance  
1843Z: Arrival Time (ZULU)  
40670: Total Ramp Weight  
35700: Landing Weight  
0: Amount of Cargo  
34300: Operational Weight

LINE 9 ALT: Fuel and Time Calculations from Point of Arrival to Alternate  
Airport

LINE 10 RES: Reserve Fuel and Time Calculations

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# OPARS USER MANUAL

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1400: Reserve Fuel  
00/21: Reserve Time

LINE 11 TOT: Total Fuel and Time Calculations  
6370: Total Fuel (En route + ALT + RES)  
02/04: Total Time (En route + ALT + RES)

LINE 12 FUEL BIAS: 333 :Fuel required for Taxi and Takeoff (lbs)  
DBIAS: 0 :Departure Bias Fuel (lbs)  
ABIAS: 0 :Arrival Bias Fuel (lbs)  
IBIAS: 0 :Ice Bias Fuel (lbs)

LINE 13 ROUTING USED FOR THIS LEG: [Printed Label]

LINE 14 KNGU .. WEA VR J121 MILIE .. KNIP: Routing Summary

LINE 15 Column Headings:  
FIX: Checkpoint/Navaid Name  
FREQ: Frequency of Fix  
LATITUDE: Latitude (Degrees, minutes, Tenths of minutes)  
TC: True Course from last Fix (Degrees)  
W/V: Wind Direction and Velocity (Degrees/knots)  
TH: True Heading (Degrees)  
DIST: Distance in Nautical Miles  
GND SPD: Ground Speed (knots)  
ETE: Estimated Time En route (hours/minutes)  
(PETA): Actual Time of Arrival (hours/minutes)  
FUEL: En route Fuel (lbs)

LINE 16 Column Headings:  
ROUTE: Routing to Fix  
CH: Channnel  
LONGITUDE: Longitude (Degrees, minutes, Tenths of minutes)  
MC: Magnetic Course (Degrees)  
DCA: Drift (L for left, R for right, or 0)  
MH: Magnetic Heading (Degrees)  
REMN: Distance Remaining (NM)  
REMN: Estimated Time Remaining (hours/minutes)  
ETA: Estimated Time of Arrival

LINE 17 KNGU: Point of Departure  
\*\*\*: Frequency (Not Applicable)  
N36562: Latitude  
\*\*\*: True Course (Not Applicable)  
00000: Wind Speed and Direction  
\*\*\*: True Heading (Not Applicable)  
0: En route Distance (NM)  
\*\*\*: Ground Speed (Not Applicable)  
00/01: Time En route (1 minute)  
BLANK: Space for crew to write in Time of Arrival  
333: Fuel En route (lbs)

LINE 18 START: Start Point of Route  
\*\*\*: Channel (Not Applicable)  
W076174: Longitude  
\*\*\*\*\*: Magnetic Course (Not Applicable)

# OPARS USER MANUAL

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00: Drift (Degrees)  
\*\*\*\*\*: Magnetic Heading (Not Applicable)  
486: Distance Remaining  
BLANK:  
01/42: Time En route (1 Hour 42 minutes)  
BLANK: Space for crew to write in Estimated Time of Arrival  
6037: Fuel Remaining

LINE 19 - LINE 22: Covers Top of Climb and other Checkpoints

LINE 23 ISO: Checkpoint on Route  
109.6: Frequency  
N35223: Latitude  
216: True Course (Degrees)  
28530: Wind Speed and Direction  
218: True Heading (Degrees)  
36: En route Distance (NM)  
291: Ground Speed (Not Applicable)  
00/07: Time En route (7 minutes)  
BLANK: Space for crew to write in Time of Arrival  
302: Fuel En route (lbs)

LINE 24 J121: Routing to Checkpoint  
33: Channel  
W077335: Longitude  
220.5: Magnetic Course (Degrees)  
L03: Drift (3 Degrees Left)  
223.2: Magnetic Heading (Degrees)  
374: Distance Remaining  
BLANK:  
01/21: Time En route (1 Hour 21 minutes)  
BLANK: Space for crew to write in Estimated Time of Arrival  
4184: Fuel Remaining

LINE 25 - LINE 29: Covers Remaining Checkpoints and Start of Descent

LINE 30 - LINE 34: Covers Remaining Checkpoints and Point of Arrival

LINE 35 TOP OF CLIMB IDENTIFICATION

LINE 36 START DESCENT POINT IDENTIFICATION

LINE 37 TOTAL WIND FACTOR: -11 KTS: Wind Factor for the Total Leg in knots

LINE 38 FL/FUEL/ETE: Alternate Flight Levels Information  
390/5200/01+46: Flight Level of 39000 feet Would Have Used 5200 lbs of  
Fuel and Time of 1 Hour and 46 minutes.  
310/5200/01+43: Flight Level of 31000 feet Would Have Used 5200 lbs of  
Fuel and Time of 1 Hour and 43 minutes.  
280/5400/01+43: Flight Level of 28000 feet Would Have Used 5400 lbs of  
Fuel and Time of 1 Hour and 43 minutes.

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## B.10 ABBREVIATED (ABB) OUTPUT EXAMPLE

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# OPARS USER MANUAL

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1) FLIGHT PLAN FOR LT AVIATOR                      COMPUTED 06NOV2000 1809Z

2) BASED UPON 2000110600 WEATHER DATA

3) BASED UPON 06NOV2000-02DEC2000 AERONAUTICAL DATA

4) LEG01 STANDARD KMRY      to KNZY                                      06NOV2000

5) ACFT TYPE C9BFNF              DRAG:    0              EFF: 100              Fuel: JP-5

6) PLANNED FOR ETD 2200Z              INITIAL CRUISE FLIGHT LEVEL 370

7)                      FUEL   TIME   DIST ARRIVE   RAMP      LAND      CARGO      OPNLWT

8) POA                      5092 00/48   331   2248Z    74216   69124              0      62500

9) ALT                      624 00/09    64   2257Z

10) RES                      6000 01/14

11) TOT                      11716 02/11

12) FUEL BIAS: 1323      DBIAS:    0      ABIAS:    0      IBIAS:    0

13) ROUTING USED FOR THIS LEG

14) KMRY .. AVE J1 LAX .. KNZY

15) TOTAL WIND FACTOR      52KTS

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## ABBREVIATED (ABB) OUTPUT FORMAT EXPLANATION

LINE 1    FLIGHT PLAN FOR:                      [Printed Label]  
            LT AVIATOR:                      Pilot's name (if given)  
            COMPUTED 06NOV2000 1809Z: ZULU Date and Time Flight Plan computed

LINE 2    BASED UPON 2000110600 WEATHER DATA  
            2000:    Year  
                    11:    Month  
                    06:    Day  
                    00:    Synoptic weather hour from which Database was constructed.

LINE 3    BASED UPON 06NOV2000-02DEC2000 AERONAUTICAL DATA:  
            Effective dates of flight plan aeronautical data

LINE 4    LEG01:              Leg Number  
            STANDARD:        Standard Leg  
            KMRY:              Point of Departure  
            KNZY:              Point of Arrival  
            06NOV2000:        Date of Departure

LINE 5    ACFT TYPE C9BFNF:    Aircraft type and configuration  
            DRAG:        0 : DRAG Count (0)  
            EFF:        100 : Efficiency of Engine (100%)  
            FUEL: JP-5 : Fuel type used

LINE 6    PLANNED FOR ETD 2200Z:    Hour of Departure (ZULU)  
            Initial cruise flight level 370: Initial cruise 37000 FT

LINE 7    Column Headings:

            FUEL:              Fuel Weight in lbs

# OPARS USER MANUAL

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TIME: Time in Hour/minutes  
DIST: Distance in Nautical Miles  
ARRIVE: Arrival Time (ZULU)  
RAMP: RAMP Weight in lbs  
LAND: Landing Weight in lbs  
CARGO: Cargo Weight in lbs  
OPNLWT: Operational Weight of Aircraft in lbs

LINE 8 POA: Fuel, Time, and Weight Calculations from Point of Departure to Point of Arrival

5092: Fuel Required from POD to POA  
00/48: En route Time  
331: Distance  
2248Z: Arrival Time (ZULU)  
74216: Total RAMP Weight  
69124: Landing Weight  
0: Amount of Cargo  
62500: Operational Weight

LINE 9 ALT: Fuel and Time Calculations from Point of Arrival to Alternate Airport.

624: Fuel to ALT  
00/09: Time to ALT  
64: Distance  
2257Z: Arrival Time (ZULU)

LINE 10 RES: Reserve Fuel and Time Calculations.

6000: Reserve Fuel  
01/14: Reserve Time

LINE 11 TOT: Total Fuel and Time Calculations.

11716: Total Fuel (en route + ALT + RES)  
02/11: Total Time (en route + ALT + RES)

LINE 12 FUEL BIAS: 1323: Fuel Required for Taxi and Takeoff (lbs).  
DBIAS: 0 : Departure Bias Fuel (lbs)  
ABIAS: 0 : Arrival Bias Fuel (lbs)  
IBIAS: 0 : Ice Bias Fuel (lbs)

LINE 13 ROUTING USED THIS LEG: [Printed Label].

LINE 14 KMRY..AVE J1 LAX..KNZY: Routing Summary.

LINE 15 TOTAL WIND FACTOR: 52 KTS: Wind factor for the total leg in knots.

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## B.11 KNEEBOARD 9 (9KB) OUTPUT EXAMPLE (NO DIVERT FUEL PLANNING)

1) FLIGHT PLAN FOR CDR SKYTRAIN II                      COMPUTED 02FEB1999 2342Z

2) BASED UPON 1999020212 WEATHER DATA

3) BASED UPON 28Jan1999-24Feb1999 AERONAUTICAL DATA

# OPARS USER MANUAL

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4) LEG01 STANDARD CYYT TO LERT 03FEB1999

5) ACFT TYPE C9BFPF DRAG: 0 EFF: 100 FUEL: JP-5

6) PLANNED FOR ETD 0130Z INITIAL CRUISE FLIGHT LEVEL 270

7) FUEL TIME DIST ARRIVE RAMP LAND CARGO OPNLWT

8) POA 30775 05/38 2233 0708Z 110000 79225 6749 66000

9) ALT ...

10) ENRT RES 3077

11) HOLDING 3100 (CASE I)

12) CONT FUEL 298

13) TOT 37251 06/50

14) FUEL BIAS: 1323 DBIAS: 500 ABIAS: 500 IBIAS: 0

15) ROUTING USED FOR THIS LEG

16) CYYT .. YYT O ESP UZ5 VFA .. LERT

17)	TO	LAT/LONG	FL	MC	MH	WIND	G/S	TAS	DIS	CUMD	ETE	T/BO	M/BO	EFR
18)	CYYT	N47371	6	*****	*****	00000	***	***	0	0	0/01	1323	1455	35928
19)		W052451												
20)	YYT	N47291	61	230.9	232.4	00533	314	283	9	9	0/02	1755	1931	35496
21)		W052511												
22)	*TOC*	N47128	270	118.2	113.5	34566	385	360	67	76	0/18	4131	4544	33120
23)		W051150												
24)	47050	N47000	270	128.6	125.2	34044	443	416	53	129	0/25	4791	5270	32460
25)		W050000												
26)	48040	N48000	270	104.2	107.8	19641	446	418	410	538	1/20	9906	10897	27345
27)		W040000												
28)	48030	N48000	270	108.7	116.0	21082	456	416	401	940	2/13	14662	16128	22589
29)		W030000												
30)	*ETP*	N46473	270	128.5	133.6	21060	413	413	146	1086	2/34	16503	18153	20748
31)		W026536												
32)	*PSR*	N46059	270	127.9	131.7	21046	412	411	83	1168	2/46	17537	19291	19714
33)		W025095												
34)	*PNR*	N44418	270	126.7	129.1	20019	408	410	169	1337	3/11	19638	21602	17613
35)		W021415												
36)	44020	N44000	270	133.1	134.0	17007	402	407	84	1421	3/23	20677	22745	16573
37)		W020000												
38)	42015	N42000	270	129.2	128.2	05548	393	405	250	1671	4/01	23818	26200	13433
39)		W015000												
40)	38010	N38000	270	144.3	139.8	05069	388	400	332	2003	4/53	27907	30698	9344
41)		W010000												
42)	ESP	N38255	270	61.4	60.9	05073	322	393	46	2049	5/01	28564	31420	8687
43)		W009112												
44)	VFA	N37008	270	149.8	144.9	04559	398	392	102	2151	5/17	29735	32709	7516
45)		W007585												
46)	*SDP*	N37000	270	108.3	104.5	04558	359	390	3	2155	5/17	29775	32753	7476
47)		W007547												
48)	LERT	N36387	1	109.8	109.1	08013	295	296	78	2233	5/38	30775	33853	6476
49)		W006210												

50) \*TOC\* = TOP OF CLIMB

51) \*SDP\* = START DESCENT POINT

52) \*ETP\* = EQUAL TIME POINT - Cruise Altitude to ETP

53) - SE Alt (FL200) to (CYYT/LERT)

54) \*PSR\* = POINT OF SAFE RETURN

55) \*PNR\* = POINT OF NO RETURN

56) FOLLOWING AIRSPACES PENETRATED

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# OPARS USER MANUAL

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57) FIR BOUNDARY: CZQX/EGGX TIME: 02+13 POSITION: N48000,W030000  
58) FIR BOUNDARY: EGGX/LPPO TIME: 03+05 POSITION: N45000,W022264  
59) FIR BOUNDARY: LPPO/LPPC TIME: 04+01 POSITION: N42000,W015000  
60) FIR BOUNDARY: LPPC/LECM TIME: 05+24 POSITION: N36528,W007230

61) FOLLOWING AIR DEFENSE IDENTIFICATION ZONES PENETRATED  
62) TIME POSITION  
63) ENTERING: CANADA ADIZ 00+06 N47253,W052286  
64) LEAVING : CANADA ADIZ 00+40 N47166,W047145

65) TOTAL 1ST HALF 2ND HALF  
66) WIND FACTOR CRUISE 11KTS 30KTS -8KTS  
67) FL200 7KTS 22KTS -8KTS  
68) FL150 3KTS 15KTS -9KTS

69) ADDITIONAL ALTITUDE DATA  
70) FL/FUEL/ETE (290/ 30300/05+35) (250/ 31600/05+44) (230/ 32800/05+53)

71) EMERGENCY DATA AND FUEL REQUIREMENTS

72) Normal Configuration:  
73) DIST TIME TIME FUEL USED/REMAINING  
74) POSITION FM CYYT TO CYYT TO LERT  
75) ETP N46353 W026233 1110 03+01 03+01 16802/20449

76) Single Engine (FL200):  
77) DIST TIME TIME FUEL USED/REMAINING  
78) POSITION FM CYYT TO CYYT TO LERT  
79) ETP N46473 W026536 1086 03+31 03+31 16503/20748

80) Pressure Loss (FL150):  
81) DIST TIME TIME FUEL USED/REMAINING  
82) POSITION FM CYYT TO CYYT TO LERT  
83) ETP N46424 W026413 1095 03+24 03+24 16624/20627

84) SE ETP EMERGENCY FUEL REQUIRED/AVAILABLE/ON DECK 19006/20748/ 4242  
85) PL ETP EMERGENCY FUEL REQUIRED/AVAILABLE/ON DECK 20627/20627/ 2500

86) CONTINGENCY FUEL INCREASED BY 298 lbs FOR PRESSURE LOSS REQUIREMENTS

87) ADDITIONAL FUEL REQUIREMENTS FOR ENGINE FAIL : 0 lbs (CYYT/LERT)  
88) ADDITIONAL FUEL REQUIREMENTS FOR PRESSURE LOSS: 298 lbs (CYYT/LERT)

89) \*Invalid Divert: KNHZ

90) MINIMUM TIME DIVERT - (CRUISE ALTITUDE)  
91) CUMD CUMD DIVERT FIELD  
92) 0 712 CYYT  
93) 713 1545 LPLA  
94) 1546 2133 LPPT  
95) 2134 2233 LERT

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## KNEEBOARD 9 (9KB) OUTPUT EXPLANATION (NO DIVERT FUEL PLANNING)

LINE 1 Flight Plan for: [Printed Label]  
CDR SKYTRAIN II Pilot's Name (If given)

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# OPARS USER MANUAL

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Computed 02FEB1999 1907Z

ZULU Date/Time Flight Plan computed

LINE 2 Based Upon 2000020212 Weather Data

1999: Year

02: Month (February)

02: Day

12: Synoptic Time from which Data Base was constructed

LINE 3 Based Upon 28Jan1999-24Feb1999 Aeronautical Data

Flight Plan computed using Aeronautical Data effective between 28 January 1999 and 24 February 1999.

LINE 4 LEGO1: Leg number

STANDARD: Leg type (Standard, Mission or Refuel)

CYYT: Point of departure

TO LERT: Point of Arrival

03FEB1999: Date of Departure

LINE 5 ACRFT TYPE C9BFNF: Aircraft type and configuration

DRAG: 0: Drag count or drag index (0)

EFF: 100: Efficiency of engine(s) (100%)

FUEL: JP-5: Fuel type used

LINE 6 PLANNED FOR ETD 0130Z: Hour of departure (ZULU)

INITIAL CRUISE FLIGHT LEVEL 330: Initial cruise at 33000 ft.

LINE 7 Column Headings:

FUEL: Fuel weight in lbs

TIME: Time in hours/minutes

DIST: Distance in nautical miles

ARRIVE: Time of arrival (ZULU)

RAMP: Ramp weight in lbs

LAND: Landing weight in lbs

CARGO: Cargo weight in lbs

OPNLWT: Operational weight of aircraft in lbs

LINE 8 POA: Fuel, Time and Weight calculations from Point of Departure to Point of Arrival

30775: Fuel required from POD to POA

05/38: Time in hours/minutes

2233: Distance in nautical miles from POD to POA

0708Z: Time of arrival (ZULU)

110000: Total ramp weight at time of engine start in lbs

79225: Landing weight in lbs

6749: Cargo weight in lbs

66000: Operational weight in lbs

LINE 9 ALT: Fuel and Time from POA to Alternate Airport

...: Alternate not requested

LINE 10 ENRT RES: 3077: En route reserve which is 10% of fuel required from POD to POA to Alternate

LINE 11 HOLDING: 3100: Fuel in lbs for holding at POA as determined by the requested CASE

# OPARS USER MANUAL

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CASE I: Fuel for holding 45 minutes at maximum endurance at 10000 feet MSL

CASE II: Fuel for holding 45 minutes at maximum endurance at 10000 feet MSL

CASE III: Fuel for holding 75 minutes at maximum endurance at 20000 feet MSL

LINE 12 CONT FUEL: Contingency fuel requested by the crew which is in addition to reserve requirements, or fuel which is added by OPARS to fulfill ETP Emergency Fuel requirements

298: Contingency fuel in lbs

LINE 13 TOT: Total Fuel and Time calculations

37251: Total Fuel (EN ROUTE + ALT + ENRT RES + HOLDING + CONT FUEL)

06/50: Total Time available in hours/minutes

LINE 14 FUEL BIAS: 1323: Fuel used for Taxi and Takeoff in lbs

DBIAS: 500: Departure Bias fuel in lbs

ABIAS: 500: Arrival Bias fuel in lbs

IBIAS: 0: Icing Bias fuel in lbs

LINE 15 ROUTING USED FOR THIS LEG: [Printed Label]

LIKE 16 CYYT .. YYT O ESP UZ5 VFA .. LERT : Summary of routing

LINE 17 Column Headings:

TO: Checkpoint/Navaid Name

LAT/LONG: Latitude/Longitude of the Checkpoint/Navaid

FL: Flight Level (Altitude in hundreds of feet)

MC: Magnetic Course in degrees

MH: Magnetic Heading in degrees

WIND: Wind direction and velocity (DDDVV)

G/S: Ground Speed in knots

TAS: True Airspeed in knots

DIS: Distance to checkpoint in nautical miles

CUMD: Cumulative distance from POD in nautical miles

ETE: Estimated Time En route in hours/minutes

T/BO: Total fuel burnoff in lbs

M/BO: Maximum allowable fuel burnoff in lbs (T/BO + 10% of T/BO)

EFR: Estimated Fuel Remaining in lbs

LINE 18 CYYT: Point of Departure name

N47371: POD Latitude 47 degrees 37.1 minutes North

6: Flight level 6(600 feet). 0 if less than 100 feet

\*\*\*: Magnetic Course (not computed for POD)

\*\*\*: Magnetic Heading (not computed for POD)

00000: Wind Direction and Velocity

\*\*\*: Ground Speed (not computed for POD)

\*\*\*: True Airspeed (not computed for POD)

0: Distance

0: Cumulative distance

0/01: Time en route (1 minute) For POD, Departure Bias

1323: Total fuel burnoff (1323 lbs) For POD, Departure Bias

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# OPARS USER MANUAL

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1455: Maximum fuel burnoff (1455 lbs)  
35928: Fuel remaining (35928 lbs)

LINE 19 W052451: POD Longitude 52 degrees 45.1 minutes West

LINE 20 YYT: Checkpoint/Navaid name  
N47291: Latitude 47 degrees 29.1 minutes North  
61: Flight level 61 (6100 feet)  
230.9: Course 230.9 degrees magnetic  
232.4: Heading 232.4 degrees magnetic  
00533: Wind 005 degrees true at 33 knots  
314: Ground speed (314 knots)  
283: True airspeed (283)  
9: Distance 9 nautical miles  
9: Cumulative distance 9 nautical miles  
0/02: En route time 0 hours and 02 minutes  
1755: Fuel burnoff 1755 lbs  
1931: Maximum fuel burnoff 1931 lbs  
35496: Fuel remaining 35496 lbs

LINE 21 W052511: Longitude 052 degrees 51.1 minutes West

LINE 22 - LINE 49: Covers remaining checkpoints and Point of Arrival

LINE 50 - LINE 55: Defines abbreviations for OPARS inserted points

LINE 56 - FOLLOWING AIRSPACES PENETRATED

LINES 57-60 - FIR BOUNDARY: CZQX/EGGX Which Boundary Crossed  
TIME: 02+13 Time in hours/minutes of Crossing  
POSITION: N48000,W030000 Latitude/Longitude of Crossing

LINE 61 - FOLLOWING AIR DEFENSE IDENTIFICATION ZONES PENETRATED

LINE 62 - TIME POSITION

LINE 63 - ENTERING: CANADA ADIZ Name of ADIZ Entered  
00+06: Time into flight in hours/minutes of entry  
N47253,W052286: Latitude/Longitude of entry

LINE 64 - LEAVING : CANADA ADIZ Name of ADIZ Exiting  
00+40: Time into flight in hours/minutes of exit  
N47166,W047145: Latitude/Longitude of exit

LINE 65 TOTAL 1ST HALF 2ND HALF: [Printed Label]

LINE 66 WIND FACTOR CRUISE: Wind factors at the cruise altitudes  
11KTS: Total wind factor is 11 knots  
30KTS: First half wind factor is 30 knots  
-8KTS: Second half wind factor is minus 8 knots

LINE 67 FL200: Wind factors at 20000 feet  
7KTS: Total 20000 ft wind factor is 7 knots  
22KTS: First half 20000 ft wind factor is 22 knots  
-8KTS: Second half 20000 ft wind factor is minus 8 knots

LINE 68 FL150: Wind factors at 15000 feet  
3KTS: Total 15000 ft wind factor is 3 knots

# OPARS USER MANUAL

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15KTS: First half 15000 it wind factor in 15 knots  
-9KTS: Second half 15000 it wind factor is minus 9 knots

NOTE FOR LINES 66-68: Wind Factors are wind effects averaged over distance for:  
Cruise levels (Actual flight levels for track) - Line 66  
Single Engine (SE) Altitude - Line 67  
Pressure Loss (PL) Altitude - Line 68

TOTAL is for entire tracks.  
At Cruise levels (Line 66) 1ST HALF / 2ND HALF refer to  
1/2 total track distance.  
At SE and PL Altitudes (Line 67-68) 1ST HALF / 2ND HALF  
refer to ETP.

In example, FL200 and FL150 are SE Altitude and PL  
Altitude for C9B aircraft.

LINE 69 ADDITIONAL ALTITUDE DATA: [Printed Label]

LINE 70 FL/FUEL/ETE: Fuel and Time estimates for altitudes other than the  
selected cruise altitude  
(290/ 30300/ 05+35): Cruise at 29000 it requires 30300 lbs of fuel  
and 5 hours and 35 minutes  
(250/ 31600/ 05+44): Cruise at 25000 it requires 31600 lbs of fuel  
and 5 hours and 44 minutes  
(230/ 32800/ 05+53): Cruise at 23000 ft requires 32800 lbs of fuel  
and 5 hours and 53 minutes

LINE 71 EMERGENCY DATA AND FUEL REQUIREMENTS: [Printed Label]

LINE 72 Normal Configuration: [Printed Label]

LINE 73 DIST TIME TIME FUEL USED/REMAINING

LINE 74 POSITION FM CYYT TO CYYT TO LERT

DIST FM CYYT: Distance from 2 Engine ETP back to POD (CYYT)  
TIME TO CYYT: Time from 2 Engine ETP back to POD (CYYT)  
TIME TO LERT: Time from 2 Engine ETP forward to POA (LERT)

LINE 75 ETP N46353 W026233 1110 03+01 03+01 16802/20449

ETP: 2 Engine Equal Time Point  
N46353: Latitude of 2 Engine Equal Time Point 46 degrees 35.3 minutes  
North  
W026233: Longitude of 2 Engine Equal Time Point 026 degrees 23.3 minutes  
West  
1110: Distance in nautical miles from 2 Engine ETP back to POD (CYYT)  
03+01: Time in hours/minutes from 2 Engine ETP back to POD (CYYT)  
03+01: Time in hours/minutes from 2 Engine ETP forward to POA (LERT)  
16802/20449: Fuel in lbs used to get to the 2 Engine ETP/Fuel in lbs  
remaining at the 2 Engine ETP

LINE 76 Single Engine (FL200):  
(FL200): Single Engine Flight Level

# OPARS USER MANUAL

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LINE 77		DIST	TIME	TIME	FUEL USED/REMAINING
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LINE 78	POSITION	FM CYYT	TO CYYT	TO LERT
---------	----------	---------	---------	---------

DIST FM CYYT: Distance from Single Engine ETP back to POD (CYYT)  
 TIME TO CYYT: Time from Single Engine ETP back to POD (CYYT)  
 TIME TO LERT: Time from Single Engine ETP forward to POA (LERT)

LINE 79	ETP	N46473 W026536	1086	03+31	03+31	16503/20748
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ETP: Single Engine Equal Time Point  
 N46473: Latitude of Single Engine Equal Time Point  
 46 degrees 47.3 minutes North  
 W026536: Longitude of Single Engine Equal Time Point  
 026 degrees 53.6 minutes West  
 1086: Distance in nautical miles from Single Engine ETP back to POD  
 (CYYT)  
 03+31: Time in hours/minutes from Single Engine ETP back to POD (CYYT)  
 03+31: Time in hours/minutes from Single Engine ETP forward to POA (LERT)  
 16503/20748: Fuel in lbs used to get to the Single Engine ETP/Fuel in lbs  
 remaining at the Single Engine ETP

LINE 80 Pressure Loss (FL150):  
 (FL150): Pressure Loss Flight Level

LINE 81		DIST	TIME	TIME	FUEL USED/REMAINING
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LINE 82	POSITION	FM CYYT	TO CYYT	TO LERT
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LINE 83	ETP	N46424 W026413	1095	03+24	03+24	16624/20627
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ETP: Pressure Loss Equal Time Point  
 N46424: Latitude of Pressure Loss Equal Time Point  
 46 degrees 42.4 minutes North  
 W026413: Longitude of Pressure Loss Equal Time Point  
 026 degrees 41.3 minutes West  
 1095: Distance in nautical miles from Pressure Loss ETP back to POD  
 (CYYT)  
 03+24: Time in hours/minutes from Pressure Loss ETP back to POD (CYYT)  
 03+24: Time in hours/minutes from Pressure Loss ETP forward to POA (LERT)  
 16624/20627: Fuel in lbs used to get to the Pressure Loss ETP/Fuel in lbs  
 remaining at the Pressure Loss ETP

84) SE ETP EMERGENCY FUEL REQUIRED/AVAILABLE/ON DECK 19006/20748/ 4242  
 19006: Fuel in lbs required at Single Engine Equal Time Point to continue  
 to the POA or return to the POA at the Single Engine Altitude  
 20748: Fuel in lbs available at the Single Engine Equal Time Point  
 4242: Fuel in lbs remaining On Deck after continuing to the POA or  
 returning to the POA from the Single Engine Equal Time Point at the  
 Single Engine Altitude

85) PL ETP EMERGENCY FUEL REQUIRED/AVAILABLE/ON DECK 20627/20627/ 2500  
 20627: Fuel in lbs required at Pressure Loss Equal Time Point to continue  
 to the POA or return to the POA at the Pressure Loss Altitude  
 20627: Fuel in lbs available at the Pressure Loss Equal Time Point

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2500: Fuel in lbs remaining On Deck after continuing to the POA or returning to the POA from the Pressure Loss Equal Time Point at the Pressure Loss Altitude

LINE 86 CONTINGENCY FUEL INCREASED BY 298 lbs FOR PRESSURE LOSS REQUIREMENTS  
The amount of fuel added to contingency fuel to meet engine failure requirements

LINE 87 ADDITIONAL FUEL REQUIREMENTS FOR ENGINE FAIL : 0 lbs (CYYT/LERT)  
Extra lbs of fuel required due to Engine Failure between CYYT and LERT

LINE 88 ADDITIONAL FUEL REQUIREMENTS FOR PRESSURE LOSS: 298 lbs (CYYT/LERT)  
Extra lbs of fuel required due to Pressure Loss between CYYT and LERT

LINE 89 \*Invalid Divert: KNHZ  
Prints only when an invalid Divert is determined.

LINE 90 MINIMUM TIME DIVERT - (CRUISE ALTITUDE)

LINE 91	CUMD	CUMD	DIVERT FIELD
LINE 92	0	712	CYYT
LINE 93	713	1545	LPLA
LINE 94	1546	2133	LPPT
LINE 95	2134	2233	LERT

LINES 90-95: Distance in nautical miles along the route of flight where you return or continue to the Divert Field.

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## B.12 KNEEBOARD 9 (9KB) OUTPUT EXAMPLE (DIVERT FUEL PLANNING)

```
1) FLIGHT PLAN FOR LT DESCARTES          COMPUTED 02FEB1999 2348Z

2) BASED UPON 1999020212 WEATHER DATA
3) BASED UPON 28Jan1999-24Feb1999 AERONAUTICAL DATA
4) LEG01 STANDARD CYYT TO LERT              03FEB1999

5) ACFT TYPE C9BFNF      DRAG: 0      EFF: 100      FUEL: JP-5

6) PLANNED FOR ETD 0130Z      INITIAL CRUISE FLIGHT LEVEL 270

7)      FUEL TIME DIST ARRIVE RAMP  LAND  CARGO  OPNLWT
8) POA      30752 05/38 2233 0708Z 110000 79248 7071 66000
9) ALT      ...
10) ENRT RES 3075
11) HOLDING 3101 (CASE I)
12) CONT FUEL 0
13) TOT      36929 06/47

14) *** DIVERT FUEL PLANNING ACTIVATED ***

15) FUEL BIAS: 1323  DBIAS: 500  ABIAS: 500  IBIAS: 0

16) ROUTING USED FOR THIS LEG
17) CYYT .. YYT O ESP UZ5 VFA .. LERT
```

# OPARS USER MANUAL

	TO	LAT/LONG	FL	MC	MH	WIND	G/S	TAS	DIS	CUMD	ETE	T/BO	M/BO	EFR
18)	CYYT	N47371	6	*****	*****	00000	***	***	0	0	0/01	1323	1455	35606
20)		W052451												
21)	YYT	N47291	61	230.9	232.4	00533	314	283	9	9	0/02	1755	1931	35173
22)		W052511												
23)	*TOC*	N47128	270	118.2	113.5	34566	385	360	67	76	0/18	4131	4544	32797
24)		W051150												
25)	47050	N47000	270	128.6	125.2	34044	443	416	53	129	0/25	4791	5270	32138
26)		W050000												
27)	48040	N48000	270	104.2	107.8	19641	446	418	410	538	1/20	9906	10897	27022
28)		W040000												
29)	*DTP1	N48000	270	100.8	109.0	20603	455	416	236	774	1/51	12703	13973	24226
30)		W034080												
31)	48030	N48000	270	108.7	114.7	21082	456	414	166	940	2/13	14630	16093	22298
32)		W030000												
33)	*PSR*	N46110	270	128.0	132.7	21048	413	413	218	1158	2/44	17391	19130	19538
34)		W025221												
35)	*PNR*	N44465	270	126.8	129.2	20020	409	410	169	1328	3/09	19504	21454	17424
36)		W021528												
37)	44020	N44000	270	133.1	134.0	17007	403	407	93	1421	3/23	20660	22726	16269
38)		W020000												
39)	*DTP2	N43047	270	124.1	123.9	06519	398	405	115	1536	3/41	22093	24302	14836
40)		W017405												
41)	42015	N42000	270	129.2	127.1	05548	386	403	135	1671	4/02	23796	26176	13133
42)		W015000												
43)	38010	N38000	270	144.3	139.8	05069	389	400	332	2003	4/53	27886	30675	9043
44)		W010000												
45)	ESP	N38255	270	61.4	60.9	05073	322	393	46	2049	5/01	28542	31396	8386
46)		W009112												
47)	*DTP3	N37177	270	148.4	143.3	05062	397	392	82	2131	5/14	29482	32430	7447
48)		W008129												
49)	VFA	N37008	270	149.8	145.3	04559	398	390	20	2151	5/17	29713	32684	7216
50)		W007585												
51)	*SDP*	N37000	270	108.3	104.5	04558	359	390	3	2155	5/17	29752	32727	7177
52)		W007547												
53)	LERT	N36387	1	109.8	109.1	08013	295	296	78	2233	5/38	30752	33827	6176
54)		W006210												

55) \*TOC\* = TOP OF CLIMB  
 56) \*SDP\* = START DESCENT POINT  
 57) \*PSR\* = POINT OF SAFE RETURN  
 58) \*PNR\* = POINT OF NO RETURN  
 59) \*DTP1 = DIVERT EQUAL TIME POINT - Cruise Altitude to DIVERT ETP  
 60) - SE Alt (FL200) to (CYYT/LPLA)  
 61) \*DTP2 = DIVERT EQUAL TIME POINT - Cruise Altitude to DIVERT ETP  
 62) - SE Alt (FL200) to (LPLA/LPPT)  
 63) \*DTP3 = DIVERT EQUAL TIME POINT - Cruise Altitude to DIVERT ETP  
 64) - SE Alt (FL200) to (LPPT/LERT)

## 65) FOLLOWING AIRSPACES PENETRATED

66)	FIR BOUNDARY: CZQX/EGGX	TIME: 02+13	POSITION: N48000,W030000
67)	FIR BOUNDARY: EGGX/LPPO	TIME: 03+05	POSITION: N45000,W022264
68)	FIR BOUNDARY: LPPO/LPPC	TIME: 04+02	POSITION: N42000,W015000
69)	FIR BOUNDARY: LPPC/LECM	TIME: 05+25	POSITION: N36528,W007230

## 70) FOLLOWING AIR DEFENSE IDENTIFICATION ZONES PENETRATED

	TIME	POSITION
72) ENTERING: CANADA ADIZ	00+06	N47253,W052286
73) LEAVING : CANADA ADIZ	00+40	N47166,W047145

74)	TOTAL	1ST HALF	2ND HALF

# OPARS USER MANUAL

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75) WIND FACTOR CRUISE 11KTS 30KTS -9KTS  
76) FL200 6KTS 21KTS -9KTS  
77) FL150 3KTS 15KTS -9KTS

78) ADDITIONAL ALTITUDE DATA  
79) FL/FUEL/ETE (290/ 30300/05+36) (250/ 31600/05+44) (230/ 32800/05+53)

80) PRESSURE LOSS EMERGENCY DATA AND FUEL REQUIREMENTS  
81) FUEL

82) ETP	POSITION	ALT	DIST	REQUIRED/AVAILABLE/ON DECK	RETRN/CONT
83) *PL1*	N48000 W035302	15000	719	14641/ 24879/ 12738	CYYT/LPLA
84) *PL2*	N43066 W017453	15000	1532	10220/ 14886/ 7165	LPLA/LPPT
85) *PL3*	N37177 W008129	15000	2131	4060/ 7447/ 5887	LPPT/LERT
86) *PL_*	= PRESSURE LOSS EQUAL TIME POINT				

87) Worst Case Pressure Loss Divert between: LPPT and LERT

88) WORST CASE ENGINE FAILURE EMERGENCY DATA AND FUEL REQUIREMENTS  
89) FUEL

90) ETP	POSITION	ALT	DIST	REQUIRED/AVAILABLE/ON DECK	RETRN/CONT
91) *DTP3	N37177 W008129	20000	2131	3898/ 7447/ 6049	LPPT/LERT

92) Worst Case Engine Failure Divert between: LPPT and LERT

93) \*Invalid Divert: KNHZ

94) MINIMUM TIME DIVERT - (CRUISE ALTITUDE)

95) CUMD	CUMD	DIVERT FIELD
96) 0	712	CYYT
97) 713	1544	LPLA
98) 1545	2132	LPPT
99) 2133	2233	LERT

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## KNEEBOARD 9 (9KB) OUTPUT EXPLANATION (DIVERT FUEL PLANNING)

**Note:** Divert Fuel Planning is activated when a valid Divert field is entered in the Flight Plan Request with a 9KB fuel option.

LINE 1 Flight Plan for: [Printed Label]  
LT DESCARTES Pilot  
Computed 02Jan1999 1907Z ZULU Date/Time Flight Plan computed

LINE 2 Based Upon 1999020212 Weather Data  
1999: Year  
02: Month (February)  
02: Day  
12: Synoptic Time from which Data Base was constructed

LINE 3 Based Upon 28Jan1999-24Feb1999 Aeronautical Data  
  
Flight Plan computed using Aeronautical Data effective between 28 January 1999 and 24 February 1999.

LINE 4 LEG01: Leg number  
STANDARD: Leg type (Standard, Mission or Refuel)  
CYYT: Point of departure  
TO LERT: Point of Arrival

# OPARS USER MANUAL

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03FEB1999:            Date of Departure

LINE 5    ACRFT TYPE C9BFNF:            Aircraft type and configuration  
          DRAG: 0:                      Drag count or drag index (0)  
          EFF: 100:                      Efficiency of engine(s) (100%)  
          FUEL: JP-5:                    Fuel type used

LINE 6    PLANNED FOR ETD 0130Z:            Hour of departure (ZULU)  
          INITIAL CRUISE FLIGHT LEVEL 270: Initial cruise at 27000 ft.

LINE 7    Column Headings:  
          FUEL:      Fuel weight in lbs  
          TIME:      Time in hours/minutes  
          DIST:      Distance in nautical miles  
          ARRIVE:    Time of arrival (ZULU)  
          RAMP:      Ramp weight in lbs  
          LAND:      Landing weight in lbs  
          CARGO:     Cargo weight in lbs  
          OPNLWT:    Operational weight of aircraft in lbs

LINE 8    POA:            Fuel, Time and Weight calculations from Point of Departure to  
                          Point of Arrival  
          30752:        Fuel required from POD to POA  
          05/38:        Time in hours/minutes  
          2233:        Distance in nautical miles from POD to POA  
          0708Z:        Time of arrival (ZULU)  
          110000:       Total ramp weight at time of engine start in lbs  
          79248:       Landing weight in lbs  
          7071:        Cargo weight in lbs  
          66000:       Operational weight in lbs

LINE 9            ALT:            Fuel and Time from POA to Alternate Airport  
          ...:            Alternate not requested

LINE 10          ENRT RES: 3075: En route reserve which is 10% of fuel required from  
                          POD to POA to Alternate

LINE 11          HOLDING: 3101: Fuel in lbs for holding at POA as determined by the  
                          requested CASE  
          CASE I:            Fuel for holding 45 minutes at maximum endurance at  
                          10000 feet MSL  
          CASE II:           Fuel for holding 45 minutes at maximum endurance at  
                          10000 feet MSL  
          CASE III:          Fuel for holding 75 minutes at maximum endurance at  
                          20000 feet MSL

LINE 12          CONT FUEL:        Contingency fuel requested by the crew which is in  
                          addition to reserve requirements and/or fuel which is  
                          added by OPARS to fulfill Emergency Fuel requirements  
                          0:                    Contingency fuel in lbs

LINE 13          TOT:            Total Fuel and Time calculations  
          36929:           Total Fuel (EN ROUTE + ALT + ENRT RES +  
                          HOLDING + CONT FUEL)  
          06/47:           Total Time available in hours/minutes

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LINE 14 \*\*\* DIVERT FUEL PLANNING ACTIVATED \*\*\*

Indicates that Divert Fuel Planning Calculations were used for this Flight Plan.

LINE 15 FUEL BIAS: 1323: Fuel used for Taxi and Takeoff in lbs  
DBIAS: 500: Departure Bias fuel in lbs  
ABIAS: 500: Arrival Bias fuel in lbs  
IBIAS: 0: Icing Bias fuel in lbs

LINE 16 ROUTING USED FOR THIS LEG: [Printed Label]

LIKE 17 CYYT .. YYT O ESP UZ5 VFA .. LERT: Summary of routing

LINE 18 Column Headings:  
TO: Checkpoint/Navaid Name  
LAT/LONG: Latitude/Longitude of the Checkpoint/Navaid  
FL: Flight Level (Altitude in hundreds of feet)  
MC: Magnetic Course in degrees  
MH: Magnetic Heading in degrees  
WIND: Wind direction and velocity (DDDVV)  
G/S: Ground Speed in knots  
TAS: True Airspeed in knots  
DIS: Distance to checkpoint in nautical miles  
CUMD: Cumulative distance from POD in nautical miles  
ETE: Estimated Time En route in hours/minutes  
T/BO: Total fuel burnoff in lbs  
M/BO: Maximum allowable fuel burnoff in lbs  
(T/BO + 10% of T/BO)  
EFR: Estimated Fuel Remaining in lbs

LINE 19 CYYT: Point of Departure name  
N47371: POD Latitude 47 degrees 37.1 minutes North  
6: Flight level 6 (600 feet). 0 if less than 100 feet  
\*\*\*: Magnetic Course (not computed for POD)  
\*\*\*: Magnetic Heading (not computed for POD)  
00000: Wind Direction and Velocity  
\*\*\*: Ground Speed (not computed for POD)  
\*\*\*: True Airspeed (not computed for POD)  
0: Distance  
0: Cumulative distance  
0/01: Time en route (1 minute)  
1323: Total fuel burnoff (1323 lbs)  
1455: Maximum fuel burnoff (1455 lbs)  
35606: Fuel remaining (35606 lbs)

LINE 20 W052451: POD Longitude 52 degrees 45.1 minutes West

LINE 21 YYT: Checkpoint/Navaid name  
N47291: Latitude 47 degrees 29.1 minutes North  
61: Flight level 61 (6100 feet)  
230.9: Course 230.9 degrees magnetic  
232.4: Heading 232.4 degrees magnetic  
00533: Wind 005 degrees true at 33 knots  
314: Ground speed (314 knots)  
283: True airspeed (283)

# OPARS USER MANUAL

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9: Distance 9 nautical miles  
9: Cumulative distance 9 nautical miles  
0/02: En route time 0 hours and 02 minutes  
1755: Fuel burnoff 1755 lbs  
1931: Maximum fuel burnoff 1931 lbs  
35173: Fuel remaining 35173 lbs

LINE 22 W052511: Longitude 052 degrees 51.1 minutes West

LINE 23 - LINE 54: Covers remaining checkpoints and Point of Arrival

LINE 55 - LINE 64: Defines abbreviations for OPARS inserted points

LINE 65 - FOLLOWING AIRSPACES PENETRATED

LINES 66-69 - FIR BOUNDARY: CZQX/EGGX Which Boundary Crossed  
TIME: 02+13 Time in hours/minutes of Crossing  
POSITION: N48000,W030000 Latitude/Longitude of Crossing

LINE 70 - FOLLOWING AIR DEFENSE IDENTIFICATION ZONES PENETRATED

LINE 71 - TIME POSITION

LINE 72 - ENTERING: CANADA ADIZ Name of ADIZ Entered  
00+06: Time into flight in hours/minutes of entry  
N47253,W052286: Latitude/Longitude of entry

LINE 73 - LEAVING : CANADA ADIZ Name of ADIZ Exiting  
00+40: Time into flight in hours/minutes of exit  
N47166,W047145: Latitude/Longitude of exit

LIKE 74 TOTAL 1ST HALF 2ND HALF: [Printed Label]

LIKE 75 WIND FACTOR CRUISE: Wind factors at the cruise altitudes

11KTS: Total wind factor is 11 knots  
30KTS: First half wind factor is 30 knots  
-9KTS: Second half wind factor is minus 9 knots

LINE 76 FL200: Wind factors at 20000 feet  
6KTS: Total 20000 ft wind factor is 6 knots  
21KTS: First half 20000 ft wind factor is 21 knots  
-9KTS: Second half 20000 ft wind factor is minus 9 knots

LINE 77 FL150: Wind factors at 15000 feet  
3KTS: Total 15000 ft wind factor is 3 knots  
15KTS: First half 15000 ft wind factor is 15 knots  
-9KTS: Second half 15000 ft wind factor is minus 9 knots

NOTE FOR LINES 74-77: Wind Factors are wind effects averaged over distance for:  
Cruise levels (Actual flight levels for track) - Line 75  
Single Engine (SE) Altitude - Line 76  
Pressure Loss (PL) Altitude - Line 77

TOTAL is for entire tracks.  
At Cruise levels (Line 75) 1ST HALF / 2ND HALF refer to  
1/2 total track distance.  
At SE and PL Altitudes (Line 76-77) 1ST HALF / 2ND HALF  
refer to ETP.

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In example, FL200 and FL150 are SE Altitude and PL Altitude for C9B aircraft.

LINE 78 ADDITIONAL ALTITUDE DATA: [Printed Label]

LINE 79 FL/FUEL/ETE: Fuel and Time estimates for altitudes other than the selected cruise altitude  
(290/ 30300/ 05+36): Cruise at 29000 it requires 30300 lbs of fuel and 5 hours and 36 minutes  
(250/ 31600/ 05+44): Cruise at 25000 it requires 31600 lbs of fuel and 5 hours and 44 minutes  
(230/ 32800/ 05+53): Cruise at 23000 ft requires 32800 lbs of fuel and 5 hours and 53 minutes

LINE 80 PRESSURE LOSS EMERGENCY DATA AND FUEL REQUIREMENTS

LINE 81 FUEL

LINE 82 ETP POSITION ALT DIST REQUIRED/AVAILABLE/ON DECK RETRN/CONT

- Headings for Pressure Loss Data

LINE 83 \*PL1\* N48000 W035302 15000 719 14641/ 24879/ 12738 CYYT/LPLA  
LINE 84 \*PL2\* N43066 W017453 15000 1532 10220/ 14886/ 7165 LPLA/LPPT  
LINE 85 \*PL3\* N37177 W008129 15000 2131 4060/ 7447/ 5887 LPPT/LERT

\*PL1\* OPARS assigned name for Pressure Loss Divert Equal Time Point  
N48000 Latitude of Pressure Loss Divert Equal Time Point 48 degrees 0.0 minutes North  
W035302 Longitude of Pressure Loss Divert Equal Time Point 035 degrees 30.2 minutes West  
15000 Pressure Loss Altitude in feet  
719 Distance along the track of the Pressure Loss Divert Equal Time Point (in nautical miles)  
14641 Fuel in lbs required from Pressure Loss Divert Equal Time Point back to last Divert or on to next Divert. The largest value is reported.  
24879 Fuel in lbs available at the Pressure Loss Divert Equal Time Point  
12738 Fuel in lbs remaining at the last Divert airport or at the next Divert airport. The smallest value is reported.  
CYYT/LPLA Last Divert Airport/Next Divert Airport

LINE 86 \*PL\_\* = PRESSURE LOSS EQUAL TIME POINT

line 87 Worst Case Pressure Loss Divert between: LPPT and LERT

- Reports the most restrictive Pressure Loss Divert Airport pair.

LINE 88) WORST CASE ENGINE FAILURE EMERGENCY DATA AND FUEL REQUIREMENTS

LINE 89) FUEL

LINE 90) ETP POSITION ALT DIST REQUIRED/AVAILABLE/ON DECK RETRN/CONT

- Headings for Worst case Engine Failure Data

LINE 91) \*DTP3 N37177 W008129 20000 2131 3898/ 7447/ 6049 LPPT/LERT

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Point	*DTP3	OPARS assigned name for Engine Failure Divert Equal Time
	N37177	Latitude of Engine Failure Divert Equal Time Point 37 degrees 17.7 minutes North
	W008129	Longitude of Engine Failure Divert Equal Time Point 008 degrees 12.9 minutes West
	20000	Engine Failure Altitude in feet
	2131	Distance along the track of the Engine Failure Divert Equal Time Point (in nautical miles)
	3898	Fuel in lbs required from Engine Failure Divert Equal Time Point back to last Divert or on to next Divert. The largest value is reported.
	7447	Fuel in lbs available at the Engine Failure Divert Equal Time Point.
	6049	Fuel in lbs remaining at the last Divert airport or at the next Divert airport. The smallest value is reported.
	LPPT/LERT	Last Divert Airport/Next Divert Airport

92) Worst Case Engine Failure      Divert between: LPPT and LERT

- Reports the most restrictive Engine Failure Divert Airport pair.

LINE 93 \*Invalid Divert: KNHZ

- Prints only when an invalid Divert is determined.

LINE 94 MINIMUM TIME DIVERT - (CRUISE ALTITUDE)

LINE 95 CUMD CUMD DIVERT FIELD

LINE 96	0	712	CYYT
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LINE 97                    713                    1544                    LPLA

LINE 98            1545            2132            LPPT

LINE 99            2133            2233            LERT

LINES 90-95: Distance in nautical miles along the route of flight where you  
 return or continue to the Divert Field.

### B.13 AS DOWNLOADED OUTPUT EXAMPLE

```

1) FLIGHT PLAN FOR PILOT                                COMPUTED 06NOV2000 2157Z

2) BASED UPON 2000110600  WEATHER DATA

3) BASED UPON 06NOV2000-02DEC2000 AERONAUTICAL DATA

4) LEG01 STANDARD KMRY      TO KDEN                                06NOV2000

5) ACFT TYPE C12FTNF      DRAG:    0      EFF: 100      FUEL: JP-8

6) PLANNED FOR ETD 2300Z      INITIAL CRUISE FLIGHT LEVEL 330

7)      FUEL  TIME  DIST ARRIVE  RAMP      LAND      CARGO      OPNLWT
8) POA      1809 03/19  872  0219Z   11409    9600        0        9100
9) ALT      ...
10) RES      500 00/36
11) TOT      2309 03/56

12) FUEL BIAS: 100    DBIAS:    0    ABIAS:    0    IBIAS:    0

```

# OPARS USER MANUAL

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13) ROUTING USED FOR THIS LEG

14) KMRY .. ECA J58 MLF J80 DBL J60 DVV .. KDEN

15) START LEG = 1

16) KMRY ,N36352,W121506,\*\*\*\*\* ,\*\*\*\*,15E, 100, 100, 2209, 99999999  
17) 0, 0, 872,\*\*\*\*\* ,\*\*\*\*\* ,\*\*\*\*\* ,\*\*\*\*\* , 3,\*\*\* ,\*\*\*  
18) 00/01,00/01,03/18,2301,015, 00,00000, 0, 00,START

19) \*TOC\*,N37478,W121115,\*\*\*\*\* ,\*\*\*\*,11E, 303, 403, 1907, 734  
20) 79, 79, 794, 12.3,023 , 9.7,021 , 330,182 ,191  
21) 00/26,00/25,02/54,2326,-52,M00,27024, 9,R03,..

22) ECA ,N37500,W121103,116.0, 107,17E, 2, 405, 1904, 214  
23) 81, 2, 791, 6.2,023 , 4.0,021 , 290,55 ,248  
24) 00/26,00/01,02/53,2326,-41,P02,27521, 193,R02,..

25) DUCKE,N37539,W120061,\*\*\*\*\* ,\*\*\*\*,15E, 110, 515, 1794, 523  
26) 132, 51, 740, 70.3,086 , 70.0,085 , 330,220 ,241  
27) 00/39,00/13,02/41,2339,-52,P00,27523, 21, 00,J58

28) TIOGA,N37560,W119257,\*\*\*\*\* ,\*\*\*\*,15E, 51, 566, 1744, 452  
29) 164, 32, 708, 71.0,086 , 70.4,086 , 330,263 ,285  
30) 00/46,00/07,02/34,2346,-52,P00,28023, 22,R01,J58

31) OAL ,N38002,W117462,117.7, 127,17E, 125, 690, 1619, 452  
32) 243, 79, 630, 69.9,087 , 69.0,086 , 330,263 ,285  
33) 01/02,00/17,02/17,0002,-52,P00,29524, 22,R01,J58

34) ILC ,N38150,W114237,116.3, 107,16E, 257, 947, 1362, 451  
35) 403, 160, 470, 68.7,085 , 67.1,083 , 330,264 ,281  
36) 01/36,00/34,01/43,0036,-52,P01,31018, 17,R02,J58

37) MLF ,N38216,W113008,112.1, 57,16E, 107, 1053, 1256, 452  
38) 468, 65, 404, 68.2,084 , 67.2,083 , 330,266 ,277  
39) 01/51,00/14,01/29,0051,-52,M00,30011, 11,R01,J58

40) JNC ,N39036,W108476,112.4, 57,15E, 380, 1434, 876, 517  
41) 670, 202, 202, 63.0,078 , 63.5,078 , 290,276 ,275  
42) 02/35,00/44,00/45,0135,-43,M01,10004, -1, 00,J80

43) TRACI,N39072,W108302,\*\*\*\*\* ,\*\*\*\*,12E, 27, 1461, 848, 537  
44) 684, 14, 188, 62.7,075 , 62.8,075 , 290,279 ,275  
45) 02/38,00/03,00/42,0138,-43,M01,08005, -4, 00,J80

46) GLENO,N39209,W107221,\*\*\*\*\* ,\*\*\*\*,12E, 107, 1568, 741, 537  
47) 738, 54, 134, 63.6,075 , 63.3,075 , 290,279 ,273  
48) 02/50,00/12,00/30,0150,-43,M00,03511, -6, 00,J80

49) DBL ,N39264,W106537,113.0, 77,12E, 45, 1613, 696, 537  
50) 761, 23, 111, 64.0,076 , 63.0,075 , 290,279 ,270  
51) 02/55,00/05,00/25,0155,-43,M00,03014, -9,R01,J80

52) \*SDP\*,N39366,W106026,\*\*\*\*\* ,\*\*\*\*,08E, 81, 1695, 615, 537  
53) 802, 41, 71, 67.6,075 , 66.2,074 , 290,279 ,268  
54) 03/04,00/09,00/16,0204,-43,M01,02020, -11,R01,J60

55) DVV ,N39537,W104375,114.7, 97,11E, 108, 1802, 507, 430  
56) 870, 68, 3, 64.4,075 , 63.6,075 , 64,268 ,270  
57) 03/19,00/15,00/01,0219,010,P08,00005, 2,R01,J60

58) KDEN ,N39515,W104400,\*\*\*\*\* ,\*\*\*\*,11E, 7, 1809, 500, 646

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59) 872, 3, 0,211.4,222 ,211.8,222 , 54,272 ,272  
60) 03/19,00/01,00/00,0219,015,P08,36005, 0, 00,STOP  
61) END LEG = 1

62) \*TOC\* = TOP OF CLIMB  
63) \*SDP\* = START DESCENT POINT

64) TOTAL WIND FACTOR 7KTS

65) ADDITIONAL ALTITUDE DATA

66) FL/FUEL/ETE (290/ 1900/03+13) (270/ 2000/03+11) (250/ 2100/03+10)

=====  
END OF TRAILER  
END OF DOWNLOAD

---

## AS DOWNLOADED OUTPUT EXPLANATION

LINE 1 FLIGHT PLAN FOR: [Printed Label]  
PILOT: Pilot's Name  
COMPUTED 06NOV2000 2157Z: ZULU Date and Time Flight Plan Computed

LINE 2 BASED UPON 2000110600Z WEATHER DATA  
2000: Year  
11: Month  
06: Day  
00: Synoptic Weather Hour from which Data Base was constructed

LINE 3 BASED UPON 06NOV2000-02DEC2000 AERONAUTICAL DATA:  
Effective dates of flight plan aeronautical data

LINE 4 LEG01: Leg Number  
STANDARD: Standard Leg  
KMRY: Point of Departure  
TO KDEN: Point of Arrival  
06NOV2000: Date of Departure

LINE 5 ACFT TYPE C12FTNF: Aircraft Type and Configuration  
DRAG: 0 : Drag Count (0)  
EFF: 100 : Efficiency of Engine (100%)  
FUEL: JP-8 : Fuel type used

LINE 6 PLANNED FOR ETD 2300Z: Hour of Departure (ZULU)  
Initial Cruise Flight Level 330: Initial Cruise at 33000 ft

LINE 7 Column Headings:  
FUEL: Fuel Weight in lbs  
TIME: Time in hours/minutes  
DIST: Distance in Nautical Miles  
ARRIVE: Arrival Time (ZULU)  
RAMP: Ramp Weight in lbs  
LAND: Landing Weight in lbs  
CARGO: Cargo Weight in lbs  
OPNLWT: Operational Weight of Aircraft in lbs

LINE 8 POA: Fuel, Time, and Weight Calculations from Point of Departure

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to Point of Arrival  
1809: Fuel Required from POD to POA  
03/19: En route Time  
872: Distance  
0219Z: Arrival Time (ZULU)  
11409: Total Ramp Weight  
9600: Landing Weight  
0: Amount of Cargo  
9100: Operational Weight

LINE 9 ALT: Fuel and Time Calculations from Point of Arrival to Alternate Airport

LINE 10 RES: Reserve Fuel and Time Calculations  
500: Reserve Fuel  
00/36: Reserve Time

LINE 11 TOT: Total Fuel and Time Calculations  
2309: Total Fuel (En route + ALT + RES)  
03/56: Total Time (En route + ALT + RES)

LINE 12 FUEL BIAS: 100 : Fuel required for Taxi and Takeoff (lbs)  
DBIAS: 0 : Departure Bias Fuel (lbs)  
ABIAS: 0 : Arrival Bias Fuel (lbs)  
IBIAS: 0 : Ice Bias Fuel (lbs)

LINE 13 ROUTING USED FOR THIS LEG: [Printed Label]

LINE 14 KMRY .. ECA J58 MLF J80 DBL J60 DVV .. KDEN: Routing Summary

LINE 15 START LEG = 1: Indicates start of leg

The Report body relates information pertaining to each wan-segment of a leg.

LINE 16 KMRY: WAN name.

A WAN is a waypoint, airport, navaid, lat/lon point, bearing/range point.  
When a WAN is an airport it contains the 4 character ICAO identifier.  
When a WAN is a waypoint, it contains the 5 character identifier.  
When a WAN is a navaid, it contains the 5 character identifier.  
When a WAN is a latitude/longitude, it contains the manufactured name for the ident.  
When a WAN is a bearing/range, it contains the 5 char identifier bearing/range is based.

N36352: Latitude

latitude is in the form dDDMMM where d - direction (N or S)  
DD - degrees  
MMM - minutes/tenths of minutes  
(implied decimal)

W121506: Longitude

longitude is in the form dDDDMMM where d - direction (E or W)  
DDD - degrees

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MMM - minutes/tenths of minutes  
(implied decimal)

\*\*\*\*\*: Frequency

The frequency is reported to the nearest tenth.  
If there is no value to report \*\*\*\*\* is reported.

\*\*\*\*: Channel

The channel is computed from the frequency as follows:

```
temp = (freq + .0005) * 10.  
make temp integer  
if temp <= 1122 then channel = temp - 1063  
if temp > 1122 then channel = temp - 1053
```

Channel is reported as a 4 digit integer.  
If there is no value to report \*\*\*\* is reported.

15E: Magnetic Variation (in whole degrees 0-360)

If there is no value to report \*\*\* is reported.

100: Fuel Burned (from last WAN, in lbs)

If this is the first WAN in report, this number would be the value  
of the bias (fuel bias)

\*\* note that fuel bias is fuel burned to wheels up point.

100: Total fuel burned en route (in lbs)

This is a cumulative fuel to this point (WAN).

2209: Fuel remaining (in lbs)

This is total fuel required minus the total fuel burned en route.

99999999: Fuel Flow (lbs per hour)

LINE 17 0: Total distance en route (in NM)

0: Distance from last WAN (in NM)

872: Distance remaining in leg (in NM)

This is the Total Distance of leg minus (-) the Total distance en route.

\*\*\*\*\*: Magnetic course from last WAN

When 1st WAN (POD) the value is set to \*\*\*\*\* .  
Magnetic course is true course - Magnetic Variation for WAN.  
Course is in degrees 0 - 360, reported to the nearest 10th of degree.

\*\*\*\*\*: True course

Whole degrees 0 - 360 .

# OPARS USER MANUAL

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When 1st WAN (POD) the value is set to \*\*\*\*\* .

\*\*\*\*\*:     Magnetic Heading

When 1st WAN (POD) the value is set to \*\*\*\*\* .

Magnetic heading is   true heading - Magnetic Variation for WAN.

Heading is in degrees 0 - 360, reported to the nearest 10th of degree.

\*\*\*\*\*:     True Heading (in whole degrees 0-360)

When 1st WAN (POD) the value is set to \*\*\*\*\* .

3:           Flight Level in hundreds of feet (300 ft.)

\*\*\*:         True Airspeed (in KNOTS)

Not valid except during cruise (from TOC to SDP)

When not valid report \*\*\* .

\*\*\*:         Ground Speed (in KNOTS)

Not valid except during cruise (from TOC to SDP)

When not valid report \*\*\* .

LINE 18     00/01:     Total time en route (in hours and minutes)

00/01:     Time from last WAN (in hours and minutes)

03/18:     Time remaining in leg (in hours and minutes)

This is the Total Time of leg minus (-) the Total Time en route.

2301:     Actual time to this navaid

Actual time using a 24hr clock. Zulu time.

Time of departure + Total time en route (or)

Time of arrival - Time remaining in leg.

015:         Outside air temperature (in whole degrees celsius)

00:         Temperature Deviation (in whole degrees celsius)

Prefixed by P for positive difference, blank when no difference,  
and M for negative difference.

00000:     Wind direction and speed

Reported in the form DDDSS where DDD is the wind direction in whole degrees and  
SS is the speed in knots.

0:           Wind Factor

00:         Wind Drift

True course - true heading

Reported in the form Ddd where D is L when wind drift < 0

# OPARS USER MANUAL

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D is blank when wind drift = 0, D is R wind drift > 0  
and dd is in whole degrees

START: Routing to the next WAN

Routing identifier. At end (POA) and/or Alternate use STOP  
When the WAN ( 1 ) is a bearing/range the value here is in the form:  
BBB/RRR where BBB is the bearing in degrees and RRR is 3 digits in NM.

LINE 19 - 60 Covers Top of Climb, Remaining Checkpoints, Start of  
Descent Point and Point of Arrival

LINE 61 END LEG = 1 : Identifies the end of the leg

LINE 62 TOP OF CLIMB IDENTIFICATION

LINE 63 START DESCENT POINT IDENTIFICATION

LINE 64 TOTAL WIND FACTOR: 7 KTS: Wind Factor for the Total Leg in knots

LINE 65 ADDITIONAL ALTITUDE DATA

LINE 66 FL/FUEL/ETE: Alternate Flight Levels Information  
290/1900/03+13: Flight Level of 29000 feet Would Have Used 1900 lbs  
of Fuel and Time of 3 hours and 13 minutes.  
270/2000/03+11: Flight Level of 27000 feet Would Have Used 2000 lbs  
of Fuel and Time of 3 hours and 11 minutes.  
250/2100/03+10: Flight Level of 25000 feet Would Have Used 2100 lbs  
of Fuel and Time of 3 hours and 10 minutes.

---

## B.14 MACPLAN (MAC) OUTPUT EXAMPLE

```
1) FLIGHT PLAN FOR LT AVIATOR          COMPUTED 06NOV2000 1800Z
2) BASED UPON 2000110600 WEATHER DATA
3) BASED UPON 06NOV2000-02DEC2000 AERONAUTICAL DATA
4) LEG01 STANDARD KDEN   TO KNGZ                      06NOV2000
5) ACFT TYPE C9BFNF      DRAG:    0      EFF: 100      FUEL: JP-5
6) PLANNED FOR ETD 2200Z          INITIAL CRUISE FLIGHT LEVEL 370
7)          FUEL  TIME  DIST ARRIVE  RAMP    LAND    CARGO   OPNLWT
8) POA          16944 03/25 1559  0225Z   86739  69800      0    65000
9) ALT          ...
10) RES          4800 00/58
11) TOT          21739 04/23
12) FUEL BIAS: 1323   DBIAS:    0   ABIAS:    0   IBIAS:    0
13) ROUTING USED FOR THIS LEG
14) KDEN .. KNGZ
15) OPARS COMPUTER FLIGHT PLAN          CFPI-2502232.0
```

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```

16)          KDEN KNGZ                      C9BFNF *OGB* 07/08Z-16Z
17) .. DEN J80 SCK .. KNGZ
18) OPTIMIZED FUEL PLAN
19)          OPNLWT 65000      PAYLOAD 23767
20) DEP FUEL/TIME BIAS 500/0005 ARR FUEL/TIME BIAS 500/0005
21) LOCATION      TTR  WIND  TAS  GS  ZD  ZT  TT  TDR  TC  MC  MH
22)   LAT  LONG    ALT   B/O  TDEV
23) STAPLETON INTL                                831
24)   N39465 W104527 0223
25) DEN          64  270/ 27  ***  *** 2    01    001  829  344 331 323
26)   N39480 W104533 0222  14  +07
27) TOC/ LEVEL OFF 280 280/ 73  ***  *** 109  25    027  720  256 242 245
28)   N39220 W107112 0157  500  +13
29) TRACI        280 285/ 72  435 370 63   10    037  657  256 242 246
30)   N39071 W108305 0147  60  +13
31) GJT          280 290/ 72  434 372 14   02    039  643  255 240 245
32)   N39036 W108475 0144  62  +13
33) MLF          310 300/ 61  449 392 202  31    110  441  258 242 246
34)   N38216 W113008 0113  94  +12
35) ILC          310 300/ 51  446 398 65   10    120  376  264 248 252
36)   N38150 W114236 0103 103  +12
37) OAL          310 305/ 28  445 413 160  23    143  216  265 247 250
38)   N38002 W117462 0040 124  +13
39) TIOGA        310 320/ 27  443 424 78   11    154  138  267 250 252
40)   N37560 W119256 0029 134  +13
41) BEGIN DESCENT 310 325/ 27  442 428 21   03    157  117  266 249 252
42)   N37545 W119528 0026 137  +13
43) DUCKE        299 325/ 25  ***  *** 10    02    159  107  266 249 252
44)   N37539 W120060 0024 138  +14
45) SCK          202 320/ 12  ***  *** 51    08    207  56   266 248 249
46)   N37500 W121102 0016 141  +16
47) KNGZ         0   015/ 18  ***  *** 54    16    223  2   267 250 253
48)   N37470 W122190 0000 149  +03
49) CFP ALT FWF-41WF1 -40 WF2 -42 ENDURANCE 0326 TOGW 109 +11
50) A1 KNUQ      ALT TDEV  WIND  TAS  GS  ZD  AD  ZT  TOGW
51)          310  +14 345/ 27 441 468  26  26  003  109
52)   1-0223 13618 2-0059 6000 3-0322 19618 4-0003 000290
53)   5-0000 00000 6-0005 500 7-00000 8-0326 019908
54)   9-    1323 10-    21231 13-    000790 B/O-    014118

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## MACPLAN (MAC) OUTPUT EXPLANATION

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LINE 1  FLIGHT PLAN FOR:          [Printed Label]
        LT AVIATOR:                Pilot's Name (If given)
        COMPUTED 06NOV2000 1800Z: ZULU Date and Time Flight Plan Computed.

LINE 2  BASED UPON 2000110600 WEATHER DATA
        2000:   Year
        11:    Month
        06:    Day
        00:    Synoptic Weather Hour from which Data Base was constructed.

LINE 3  BASED UPON 06NOV2000-02DEC2000 AERONAUTICAL DATA:
        Effective dates of flight plan aeronautical data

LINE 4  LEG01:                    Leg Number
        STANDARD:                  Standard Leg
        KMRY:                      Point of Departure

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# OPARS USER MANUAL

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KNZY: Point of Arrival  
06NOV2000: Date of Departure

LINE 5 ACFT TYPE A6AFNF: Aircraft Type and Configuration  
DRAG: 0 : Drag Count  
EFF: 100 : Efficiency of Engine (100%)  
FUEL: JP-5 : Fuel type used

LINE 6 PLANNED FOR ETD 2200Z: Hour of Departure (ZULU)  
INITIAL CRUISE FLIGHT LEVEL 370: Initial Cruise at 37000 ft

LINE 7 Column Headings  
FUEL: Fuel Weight in lbs  
TIME: Time in hours/minutes  
DIST: Distance in Nautical Miles  
ARRIVE: Arrival Time (ZULU)  
RAMP: Ramp Weight in lbs  
LAND: Landing Weight in lbs  
CARGO: Cargo Weight in lbs  
OPNLWT: Operational Weight of Aircraft in lbs

LINE 8 POA: Fuel, Time, and Weight Calculations from  
Point of Departure to Point of Arrival  
16944: Fuel required from POD to POA  
03/25: En route Time  
1559: Distance  
0225Z: Arrival Time (ZULU)  
86739: Total RAMP Weight  
69800: Landing Weight  
0: Amount of Cargo  
65000: Operational Weight

LINE 9 ALT: Fuel and Time Calculations from Point of Arrival  
to Alternate Airport. (If given)

LINE 10 RES: Reserve Fuel and time calculation  
4800: Reserve Fuel  
00/58: Reserve Time

LINE 11 TOT: Total Fuel and Time Calculations  
21739: Total Fuel (En route + ALT + RES)  
04/23 Total Time (En route + ALT + RES)

LINE 12 FUEL BIAS: 1323: Fuel Required for Taxi and Takeoff (lbs)  
DBIAS: 0 : Departure Bias Fuel (lbs)  
ABIAS: 0 : Arrival Bias Fuel (lbs)  
IBIAS: 0 : Ice Bias Fuel (lbs)

LINE 13 ROUTING USED THIS LEG: [Printed Label]

LINE 14 KMRY .. KNZY: Routing Summary

LINE 15 OPARS COMPUTER FLIGHT PLAN: [Printed Label]  
CFPI -: 2502232.0: Computer Flight Plan Identifier  
WHERE:  
250: Julian Day

# OPARS USER MANUAL

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2232.0: Time Computed (2232 ZULU)

LINE 16 KDEN KNGZ: Departure and Destination Station  
C9BFNF: Aircraft Type and Configuration  
\*OGB\*: OPARS Global Weather Database  
(Note: \*OCL\* = OPARS Climatology Database)  
7/08Z-16Z: Day and Valid Takeoff Time span (+ 4 hours)

LINE 17 KDEN .. DEN J80 SCK .. KNHZ: Route Summary

LINE 18 OPTIMIZED FUEL PLAN: [Printed Label]

LINE 19 OPNLWT 65000: Operational Weight of Aircraft  
PAYLOAD 23767: Cargo/Passenger Weight

LINE 20 DEP FUEL/TIME BIAS 500/0005: Departure Fuel Bias  
(500 lbs) and Time (5mins)  
ARR FUEL/TIME BIAS 500/0005: Arrival Fuel Bias  
(500 lbs) and Time (5mins)

Column Headings:

LINE 21 LOCATION: Checkpoint/Navaid Name  
TTR: Total Time Remaining (hours and minutes)  
WIND: Wind Direction and Speed (Nearest Degree/knots)  
TAS: True Air Speed (knots)  
GS: Ground Speed (knots)  
ZD: Zone Distance (NM)  
ZT: Zone Time (minutes)  
TT: Total Time (hours, minutes)  
TDR: Total Distance Remaining (NM)  
TC: True Course (Degrees)  
MC: Magnetic Course (Degrees)  
MH: Magnetic Heading (Degrees)

LINE 22 LAT: Latitude (Degrees, minutes, and Tenths)  
LONG: Longitude (Degrees, minutes and Tenths)  
ALT: Altitude or Flight Level (Hundreds of feet)  
B/O: Cumulative Burnoff Fuel (Hundreds of lbs)  
TDEV: Temperature Deviation (Degrees)

LINE 23 STAPLETON INTL: Departure Station Name

LINE 24 N39465: Latitude (39 degrees 46.5 minutes North)  
W104527: Longitude (104 degrees 52.7 minutes West)  
0223: Time Remaining (2 hours 23 minutes)  
831: Total Distance Remaining (831 NM)

LINE 25 DEN: Checkpoint Name  
64: Altitude (6400 ft)  
270/27: Wind (270 degrees at 27 knots)  
\*\*\*: TAS (Not Printed during Climb)  
\*\*\*: Ground Speed (Not Printed during Climb)  
2: Zone Distance (2 NM)  
1: Zone Time (1 minute)  
001: Total Time (1 minute)  
829: Distance Remaining (829 NM)

# OPARS USER MANUAL

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344: True Course (344 degrees)  
331: Magnetic Course (331 degrees)  
323: Magnetic Heading (323 degrees)

LINE 26 N39480: Latitude (39 degrees 48.0 minutes North)  
W104533: Longitude (104 degrees 53.3 minutes West)  
0222: Total Time Remaining (2 hours 22 minutes)  
14: Burnoff (1400 lbs)  
+07: Temperature Deviation (+7 degrees)

LINE 27 - LINE 48: Covers Remaining Checkpoints and Destination Station

LINE 49 CFP ALT: [Printed Label] (Computerized Flight Plan  
Altitude Information)  
FWF -41: Forecast Wind Factor Computed between Top of Climb and  
Descent Point  
WF1 -40: Forecast Wind Factor for First Half of the Flight  
WF2 -42: Forecast Wind Factor for Second Half of the Flight  
ENDURANCE 0326: Endurance (3 hours 26 minutes)  
TOGW 109: Takeoff Gross Weight (109000 lbs)  
+11: Average Temperature Deviation (Degrees)

LINE 50 A1 KNUQ: Primary Alternate Airport

Column Headings:  
ALT: Altitude  
TDEV: Temperature Deviation  
WIND: Wind Direction and Speed  
TAS: True Air Speed  
GS: Ground Speed  
ZD: Zone Distance  
AD: Air Distance (NM)  
ZT: Zone Time  
TOGW: Takeoff Gross Weight

LINE 51 310: Altitude (31000 ft)  
+14: Temperature Deviation (+14 degrees)  
345/27: Wind (345 degrees at 27 knots)  
441: TAS (441 knots)  
468: Ground Speed (468 knots)  
26: Zone Distance (26 NM)  
26: Air Distance (26 NM)  
003: Zone Time (3 minutes)  
109: Takeoff Gross Weight (109000 lbs)

LINES 52 Time and Fuel Computation Information  
THRU 54 Item Number

1 - 0223 013618: En route Time and Fuel  
2 - 0059 006000: Reserve Time and Fuel  
3 - 0322 019618: En route and Reserve Time and Fuel  
4 - 0003 000290: Alternate and Missed Approach Time and Fuel  
5 - 0000 000000: Holding Time and Fuel  
6 - 0005 000500: Approach Time and Fuel  
7 - 000000: Identified Extra Fuel  
8 - 0326 019908: Total Takeoff Time and Fuel  
(3 + 4 + 5 + 6 + 7)

# OPARS USER MANUAL

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9 - 001323: Taxi and Run Up Fuel  
10 - 021231: Required Ramp fuel  
13 - 000790: Required Over Destination Fuel  
(4 + 5 + 6)  
B/O - 014118: Total Burnoff Fuel

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## B.15 PDA OUTPUT EXAMPLE

1) FLIGHT PLAN FOR LT B SMITH  
2) COMPUTED AT 4OCT2001 1440Z  
3) BASED UPON:  
4) 2001100400 WEATHER DATA  
5) 06Sep2001-03Oct2001 AERONAUTICAL DATA  
6) LEG 1 STANDARD KNMM TO KNTU  
7) ACFT TYPE: C9BFNF DRAG: 0  
8) EFF: 100 FUEL: JP-5  
9) FUEL BIAS: 1323 DBIAS: 0  
10) ABIAS: 0 IBIAS: 0  
11) FUEL TIME DIST ARRIVE  
12) POA 8462 01/38 700 1638Z  
13) ALT ...  
14) RES 4800 00/58  
15) TOT 13263 02/36  
16) TOTAL WIND FACTOR 27KTS  
17) ADDITIONAL ALTITUDE DATA  
18) FL/FUEL/ETE (330/ 8800/01+41)  
19) (290/ 9100/01+43)  
20) (270/ 9200/01+46)  
21) RAMP LAND CARGO OPNLWT  
22) 78263 69800 0 65000  
23) ROUTING USED FOR THIS LEG  
24) KNMM .. JAMMR J239 ATL J14 AJFEB J4  
25) CAE J51 TUBAS J52 RDU J207 FKN ..  
26) KNTU

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27)	TO	T/C	WIND	DFT	G/S	DIS	DISR
28)	KNMM	***	00000	00	***	1	700
29)	JAMMR	063	27044	R01	398	91	609
30)	*TOC*	079	27048	R01	449	34	575
31)	WEONE	079	27045	R01	481	59	516
32)	ATL	080	27044	R01	478	35	481
33)	AJFEB	087	27044	00	478	13	468
34)	IRQ	088	27543	00	477	101	368
35)	CAE	081	27039	R01	472	56	312
36)	CASAT	042	26537	R02	457	50	262
37)	TUBAS	043	27035	R02	456	57	205
38)	*SDP*	043	27035	R02	454	19	186
39)	RDU	043	27534	R02	451	39	147
40)	FKN	059	25525	R01	408	99	47

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# OPARS USER MANUAL

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41) KNTU 082 24516 00 302 47 0  
42) TO T/C WIND DFT G/S DIS DISR

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43) TO FL TAS ETE CUMT ETR (K)EFR  
44) KNMM 4 \*\*\* 00/01 00/01 01/37 11940  
45) JAMMR 311 373 00/14 00/14 01/23 9831  
46) \*TOC\* 370 401 00/04 00/19 01/19 9404  
47) WEONE 370 435 00/07 00/26 01/12 8889  
48) ATL 370 434 00/04 00/30 01/07 8586  
49) AJFEB 370 434 00/02 00/32 01/06 8473  
50) IRQ 370 434 00/13 00/45 00/53 7601  
51) CAE 370 432 00/07 00/52 00/46 7115  
52) CASAT 370 431 00/07 00/58 00/39 6670  
53) TUBAS 370 431 00/07 01/06 00/32 6167  
54) \*SDP\* 370 430 00/03 01/08 00/29 5995  
55) RDU 331 451 00/05 01/14 00/24 5730  
56) FKN 201 408 00/15 01/28 00/09 5026  
57) KNTU 0 302 00/09 01/38 00/00 4800  
58) TO FL TAS ETE CUMT ETR (K)EFR

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59) KNMM N32331W088333  
60) JAMMR N33139W086565  
61) \*TOC\* N33203W086171  
62) WEONE N33315W085073  
63) ATL N33377W084261  
64) AJFEB N33384W084105  
65) IRQ N33424W082097  
66) CAE N33514W081032  
67) CASAT N34284W080226  
68) TUBAS N35100W079359  
69) \*SDP\* N35241W079196  
70) RDU N35524W078470  
71) FKN N36429W077007  
72) KNTU N36492W076020

73) FOLLOWING SPECIAL USE AREAS PENETRATED

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## PDA OUTPUT EXPLANATION

LINE 1 FLIGHT PLAN FOR: [Printed Label]  
LT B SMITH: Pilot's Name

LINE 2 COMPUTED 4OCT2001 1440Z: ZULU Date and Time Flight Plan Computed

LINE 3 BASED UPON: [Printed Label]

LINE 4 2001100400Z WEATHER DATA  
2001: Year  
10: Month  
04: Day  
00: Synoptic Weather Hour from which Data Base was constructed

LINE 5 BASED UPON 06Sep2001-03Oct2001 AERONAUTICAL DATA:  
Effective dates of flight plan aeronautical data

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# OPARS USER MANUAL

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LINE 6      LEG 1:            Leg Number  
             STANDARD:       Standard Leg  
             KNMM:           Point of Departure  
             TO KNTU:        Point of Arrival

LINE 7      ACFT TYPE: C9BFNF:       Aircraft Type and Configuration  
             DRAG:            0:        Drag Count (0)

LINE 8      EFF:    100    : Efficiency of Engine (100%)  
             FUEL: JP-5    : Fuel type used

LINE 9      FUEL BIAS: 1323    : Fuel required for Taxi and Takeoff (lbs)  
             DBIAS:        0    : Departure Bias Fuel (lbs)

LINE 10     ABIAS:        0    : Arrival Bias Fuel (lbs)  
             IBIAS:        0    : Ice Bias Fuel (lbs)

LINE 11     Column Headings:  
             FUEL:    Fuel Weight  
             TIME:    Time  
             DIST:    Distance  
             ARRIVE: Arrival Time

LINE 12     POA:        Fuel, Time, and Weight Calculations from Point of Departure  
                         to Point of Arrival  
             8462:    Fuel Required from POD to POA in lbs  
             01/38:   En route Time in hh/mm  
             700:     Distance in NM  
             1638Z:   Arrival Time (ZULU)

LINE 13     ALT:        Fuel and Time Calculations from Point of Arrival to Alternate  
                         Airport

LINE 14     RES:        Reserve Fuel and Time Calculations  
             4800:    Reserve Fuel in lbs  
             00/58:   Reserve Time in hh/mm

LINE 15     TOT:        Total Fuel and Time Calculations  
             13263:   Total Fuel (En route + ALT + RES) in lbs  
             02/36:   Total Time (En route + ALT + RES) in hh/mm

LINE 16     TOTAL WIND FACTOR: 27KTS: Wind Factor for the Total Leg in knots

LINE 17     ADDITONAL ALTITUDE DATA:   [Printed Label]

LINE 18     FL/FUEL/ETE:        Alternate Flight Levels Information  
             330/8800/01+41:   Flight Level of 33000 feet would have used 8800 lbs  
                                 of Fuel and Time of 1 hour and 41 minutes.

LINE 19     290/9100/01+43:   Flight Level of 29000 feet would have used 9100 lbs  
                                 of Fuel and Time of 1 hour and 43 minutes.

LINE 20     270/9200/01+46:   Flight Level of 27000 feet would have used 9200 lbs  
                                 of Fuel and Time of 1 hour and 46 minutes.

LINE 21     RAMP:       Ramp Weight  
             LAND:       Landing Weight  
             CARGO:      Cargo Weight

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OPNLWT: Operational Weight

LINE 22      78263: Ramp Weight in lbs
              69800: Landing Weight in lbs
                0: Cargo Weight in lbs
              65000: Operational Weight in lbs

LINE 23      ROUTING USED FOR THIS LEG:                [Printed Label]

LINE 24      KNMM .. JAMMR J239 OATL J14 AJFEB J4: 1st line of Routing Summary

LINE 25      CAE J51 TUBAS J52 RDU J207 FKN: 2nd line of Routing Summary

LINE 26      .. KNZY:      Last line of Routing Summary

LINE 27      Column Headings:
              TO: Checkpoint/Navaid Name
              T/C: True Course in degrees true
              WIND: Wind Direction and Velocity in the form dddvv. Wind is a spot
                    value at each checkpoint
              DFT: Degrees of Drift Left or Right. Drift angle is an average value
                    along the track between checkpoints based on average wind
                    factor for each segment.
              G/S: Ground Speed (knots)
              DIS: Distance to Point in nm
              DISR: Distance Remaining in nm

LINE 28      KNMM: Point of Departure
              ***: True Course (***) means Not Computed)
              00000: Wind Direction and Velocity (dddvv)
              00: Drift Factor (no drift)
              ***: Ground Speed (***) means Not Computed)
              1: Distance in NM
              700: Distance Remaining in NM

LINE 29      JAMMR: Checkpoint/Navaid Name
              063: True Course in degrees true
              27044: Wind Direction and Velocity (dddvv)
              R01: Drift Factor (Right, 1 degree)
              398: Ground Speed in knots
              91: Distance in NM
              609: Distance Remaining in NM

LINE 30      *TOC*: Top of Climb
              079: True Course in degrees true
              27048: Wind Direction and Velocity (dddvv)
              R01: Drift Factor (Right 1 Degree)
              449: Ground Speed in knots
              34: Distance in NM
              575: Distance Remaining in NM

LINE 31 - LINE 41 Covers Remaining Checkpoints and Point of Arrival

LINE 42      Column Footings (Same as Headings)

LINE 43      TO: Checkpoint/Navaid Name

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# OPARS USER MANUAL

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FL: Flight Level  
TAS: True Air Speed  
ETE: Estimated Time En Route  
CUMT: Cumulative Time from POD  
ETR: Estimated Time Remaining  
(K)EFR: Estimated Fuel Remaining

LINE 44 KNMM: Point of Departure  
4: Flight Level in hundreds of feet  
\*\*\*: True Air Speed (\*\*\*) means Not Computed)  
00/01: Time En route in hh/mm  
00/01: Cumulative Time in hh/mm  
01/37: Time Remaining in hh/mm  
11940: Fuel Remaining in lbs

LINE 45 - LINE 57 Covers Remaining Checkpoints and Point of Arrival

LINE 58 Column Footings (Same as Headings)

LINE 59 KNMM: Point of departure  
N32331W088333: Latitude/Longitude  
N32331: 32 degrees 33.1 minutes North Latitude  
W088333: 88 degrees 33.3 minutes West Longitude

LINE 60 - LINE 72 Covers Remaining Route Waypoints and their Latitude/Longitude

LINE 73 FOLLOWING SPECIAL USE AREAS PENETRATED [Printed Label]

## B.16 OVERWATER OUTPUT EXAMPLE

10/10/2003

25)	____/____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	____/____/____/____/____	_____	_____	_____	_____	_____
26)*TOC*	0/09	350	P08	22551	247	231	230	57	1.0	4.6	-----	FUEL	-----		-----	P + 20	-----	-----	-----
27)N3728.6	W12337.5	0/23			384	426	729	2029	29.5	6.6	LUSE	RUSE	TUSE	L	R	C	F	A	T
28)	____/____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	____/____/____/____/____	_____	_____	_____	_____	_____
29)BEBOP	0/11	350	P09	22546	247	231	230	72	0.9	5.5	-----	FUEL	-----		-----	P + 20	-----	-----	-----
30)N3700.0	W12500.1	0/34			405	450	769	1958	28.6	7.7	LUSE	RUSE	TUSE	L	R	C	F	A	T
31)	____/____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	____/____/____/____/____	_____	_____	_____	_____	_____
32)BAART	0/14	350	P09	24527	251	235	235	98	1.2	6.7	-----	FUEL	-----		-----	P + 20	-----	-----	-----
33)N3627.7	W12656.0	0/48			415	450	769	1859	27.4	9.0	LUSE	RUSE	TUSE	L	R	C	F	A	T
34)	____/____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	____/____/____/____/____	_____	_____	_____	_____	_____
35)BLUFF	0/20	350	P08	32026	249	234	235	140	1.7	8.4	-----	FUEL	-----		-----	P + 20	-----	-----	-----
36)N3538.6	W12938.1	1/07			428	449	769	1719	25.7	10.8	LUSE	RUSE	TUSE	L	R	C	F	A	T
37)	____/____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	____/____/____/____/____	_____	_____	_____	_____	_____
38)BAKON	0/41	350	P08	31037	247	232	234	299	3.4	11.8	-----	FUEL	-----		-----	P + 20	-----	-----	-----
39)N3341.9	W13513.3	1/48			438	448	767	1420	22.3	14.6	LUSE	RUSE	TUSE	L	R	C	F	A	T
40)	____/____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	____/____/____/____/____	_____	_____	_____	_____	_____
41)*ETP*	0/47	350	P10	30041	244	230	232	333	3.8	15.6	-----	FUEL	-----		-----	P + 20	-----	-----	-----
42)N3114.8	W14107.6	2/36			424	446	760	1087	18.5	18.8	LUSE	RUSE	TUSE	L	R	C	F	A	T
43)	____/____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	____/____/____/____/____	_____	_____	_____	_____	_____
44)BILLO	0/01	350	P10	30042	244	230	232	9	0.1	15.7	-----	FUEL	-----		-----	P + 20	-----	-----	-----
45)N3110.7	W14117.4	2/37			419	442	753	1077	18.4	18.9	LUSE	RUSE	TUSE	L	R	C	F	A	T
46)	____/____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	____/____/____/____/____	_____	_____	_____	_____	_____
47)*PSR*	0/25	350	P10	29532	241	228	230	178	2.0	17.7	-----	FUEL	-----		-----	P + 20	-----	-----	-----
48)N2944.9	W14418.1	3/02			422	443	755	900	16.4	21.1	LUSE	RUSE	TUSE	L	R	C	F	A	T
49)	____/____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	____/____/____/____/____	_____	_____	_____	_____	_____
50)BEATS	0/11	350	P10	28532	241	228	230	79	0.9	18.5	-----	FUEL	-----		-----	P + 20	-----	-----	-----
51)N2906.8	W14537.3	3/13			418	440	750	821	15.6	22.0	LUSE	RUSE	TUSE	L	R	C	F	A	T
52)	/													/	/	/	/	/	/

# OPARS USER MANUAL

53) *PNR*	0/19	350	P09	27535	239	227	228	129	1.4	19.9	-----	FUEL	-----		-----	P + 20	-----
54) N2800.3 W14742.5	3/32				412	438	748	692	14.1	23.6	LUSE RUSE TUSE	L R C F A T			WIND	D/A	M/C M/H
55)	____/____	____	____	____	____	____	____	____	____	____	____	____/____/____/____/____	____	____	____	____	____
56) BANDY	0/25	350	P09	26033	239	227	228	171	1.9	21.8	-----	FUEL	-----		-----	P + 20	-----
57) N2631.8 W15027.4	3/58				405	435	743	521	12.3	25.6	LUSE RUSE TUSE	L R C F A T			WIND	D/A	M/C M/H
58)	____/____	____	____	____	____	____	____	____	____	____	____	____/____/____/____/____	____	____	____	____	____
59) BRADR	0/33	350	P10	26026	237	226	227	219	2.4	24.2	-----	FUEL	-----		-----	P + 20	-----
60) N2432.6 W15350.9	4/30				403	432	736	302	9.9	28.2	LUSE RUSE TUSE	L R C F A T			WIND	D/A	M/C M/H
61)	____/____	____	____	____	____	____	____	____	____	____	____	____/____/____/____/____	____	____	____	____	____
62) BITTA	0/16	350	P10	26020	236	225	226	108	1.1	25.3	-----	FUEL	-----		-----	P + 20	-----
63) N2331.7 W15528.7	4/46				406	427	728	194	8.8	29.4	LUSE RUSE TUSE	L R C F A T			WIND	D/A	M/C M/H
64)	____/____	____	____	____	____	____	____	____	____	____	____	____/____/____/____/____	____	____	____	____	____
65) *SDP*	0/05	350	P10	26015	212	202	203	35	0.4	25.6	-----	FUEL	-----		-----	P + 20	-----
66) N2302.1 W15549.2	4/51				412	424	723	159	8.4	29.8	LUSE RUSE TUSE	L R C F A T			WIND	D/A	M/C M/H
67)	____/____	____	____	____	____	____	____	____	____	____	____	____/____/____/____/____	____	____	____	____	____
68) 00MKK	0/05	311	P12	25510	212	202	203	36	0.3	25.9	-----	FUEL	-----		-----	P + 20	-----
69) N2231.7 W15610.3	4/56				412	412	699	123	8.2	30.1	LUSE RUSE TUSE	L R C F A T			WIND	D/A	M/C M/H
70)	____/____	____	____	____	____	____	____	____	____	____	____	____/____/____/____/____	____	____	____	____	____
71) CKH99	0/02	295	P13	24007	217	206	207	16	0.1	26.0	-----	FUEL	-----		-----	P + 20	-----
72) N2219.0 W15620.5	4/59				399	399	675	107	8.1	30.3	LUSE RUSE TUSE	L R C F A T			WIND	D/A	M/C M/H
73)	____/____	____	____	____	____	____	____	____	____	____	____	____/____/____/____/____	____	____	____	____	____
74) MAGGI	0/07	246	P15	19004	231	220	220	45	0.4	26.4	-----	FUEL	-----		-----	P + 20	-----
75) N2150.4 W15657.9	5/06				376	376	634	62	7.7	30.7	LUSE RUSE TUSE	L R C F A T			WIND	D/A	M/C M/H
76)	____/____	____	____	____	____	____	____	____	____	____	____	____/____/____/____/____	____	____	____	____	____
77) PHNL	0/12	0	P12	08517	240	230	229	62	0.3	26.7	-----	FUEL	-----		-----	P + 20	-----
78) N2119.0 W15755.6	5/18				315	315	466	0	7.4	31.0	LUSE RUSE TUSE	L R C F A T			WIND	D/A	M/C M/H
79)	____/____	____	____	____	____	____	____	____	____	____	____	____/____/____/____/____	____	____	____	____	____

# OPARS USER MANUAL

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80)\*TOC\* = TOP OF CLIMB  
81)\*SDP\* = START DESCENT POINT  
82)\*ETP\* = EQUAL TIME POINT - Cruise Altitude to ETP  
83) - SE Alt (FL200) to (KMRY/PHNL)  
84)\*PSR\* = POINT OF SAFE RETURN  
85)\*PNR\* = POINT OF NO RETURN

86) FOLLOWING AIRSPACES PENETRATED

87) FIR BOUNDARY: KZ /KZOA TIME: 00+48 POSITION: N36265,W127000  
88) FIR BOUNDARY: KZOA/PHZH TIME: 04+30 POSITION: N24312,W153532

89) FOLLOWING AIR DEFENSE IDENTIFICATION ZONES PENETRATED

90)		TIME	POSITION
91) ENTERING: WEST CONUS ADIZ		00+19	N37383,W123093
92) LEAVING : WEST CONUS ADIZ		01+04	N35466,W129117
93) ENTERING: HAWAIIAN OUTER COASTAL ADIZ		04+36	N24102,W154268
94) ENTERING: HAWAIIAN INNER COASTAL ADIZ		05+02	N22067,W156367

95)		TOTAL	1ST HALF	2ND HALF
96) WIND FACTOR CRUISE		-20KTS	-19KTS	-21KTS
97)	FL200	-1KTS	2KTS	-4KTS
98)	FL150	4KTS	4KTS	4KTS

99) ADDITIONAL ALTITUDE DATA

100) FL/FUEL/ETE (310/ 27600/05+24) (280/ 28400/05+34) (260/ 29000/05+38)

101) EMERGENCY DATA AND FUEL REQUIREMENTS

102) Normal Configuration:

103)		DIST	TIME	TIME	FUEL USED/REMAINING
104)	POSITION	FM KMRY	TO KMRY	TO PHNL	
105) ETP	N30393 W142238	1158	02+32	02+32	16418/17664

# OPARS USER MANUAL

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106) Single Engine (FL200):

107)		DIST	TIME	TIME	FUEL USED/REMAINING
108)	POSITION	FM KMRY	TO KMRY	TO PHNL	
109)ETP	N31148 W141076	1083	03+19	03+19	15595/18488

110) Pressure Loss (FL150):

111)		DIST	TIME	TIME	FUEL USED/REMAINING
112)	POSITION	FM KMRY	TO KMRY	TO PHNL	
113)ETP	N31204 W140543	1071	03+13	03+13	15450/18633

114) SE ETP EMERGENCY FUEL REQUIRED/AVAILABLE/ON DECK 16769/18488/ 4219

115) PL ETP EMERGENCY FUEL REQUIRED/AVAILABLE/ON DECK 18633/18633/ 2500

116) CONTINGENCY FUEL INCREASED BY 1628 LBS FOR PRESSURE LOSS REQUIREMENTS

117) ADDITIONAL FUEL REQUIREMENTS FOR ENGINE FAIL : 0 LBS (KMRY/PHNL)

118) ADDITIONAL FUEL REQUIREMENTS FOR PRESSURE LOSS: 1628 LBS (KMRY/PHNL)

---

## OVERWATER OUTPUT EXPLANATION

LINE 1 Flight Plan for: [Printed Label]  
MARY9KBPLAN Pilot's Name (If given)  
Computed 10SEP2001 2245Z ZULU Date/Time Flight Plan computed

LINE 2 Based Upon 2001091012 Weather Data  
2001: Year  
09: Month (September)  
10: Day

# OPARS USER MANUAL

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12:        Synoptic Time from which Data Base was constructed

LINE 3   Based Upon 06Sep2001-03Oct2001 Aeronautical Data

Flight Plan computed using Aeronautical Data effective between 06 September 2001 and 03 October 2001.

LINE 4   LEG01:            Leg number  
          STANDARD:       Leg type (Standard, Mission, or Refuel)  
          KMRY:            Point of Departure  
          TO PHNL:         Point of Arrival  
          10SEP2001:       Date of Departure

LINE 5   ACFT TYPE C9BFNF:    Aircraft type and configuration  
          DRAG: 0:           Drag count or drag index (0)  
          EFF: 100:          Engine efficiency (100%)  
          FUEL: JP-5:        Fuel type used

LINE 6   PLANNED FOR ETD 2300Z:            Departure time (ZULU)  
          INITIAL CRUISE FLIGHT LEVEL 350: Initial cruise altitude is 35,000 ft.

LINE 7   Column Headings:  
          FUEL:        Fuel weight  
          TIME:        Time  
          DIST:        Distance  
          ARRIVE:      Arrival Time (ZULU)  
          RAMP:        Ramp Weight  
          LAND:        Landing Weight  
          CARGO:       Cargo Weight  
          OPNLWT:      Operational Weight

# OPARS USER MANUAL

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LINE 8     POA:     Fuel, Time and Weight calculations from Point of Departure to Point of Arrival  
            26706:     Fuel required from POD to POA in lbs  
            05/18:     Time in hh/mm  
            2169:     Distance from POD to POA in NM  
            0418Z:     Time of Arrival (ZULU)  
            99083:     Total ramp weight at time of engine start in lbs  
            72377:     Landing Weight in lbs  
                0:     Cargo Weight in lbs  
            65000:     Operational Weight in lbs

LINE 9     ALT:     Fuel and Time from POA to Alternate Airport  
            ...:     Alternate not requested

LINE 10    ENRT RES: 2671: En route reserve which is 10% of fuel required from POD to POA to Alternate

LINE 11     HOLDING: 3078: Fuel in lbs for holding at POA as determined by the requested CASE  
            CASE I:     Fuel for holding 45 minutes at maximum endurance at 10000 feet MSL  
            CASE II:     Fuel for alternate and holding 45 minutes at maximum endurance at 10000 feet  
                                MSL  
            CASE III:     Fuel for holding 75 minutes at maximum endurance at 20000 feet MSL

LINE 12     CONT FUEL:     Contingency fuel requested by the crew that is in addition to reserve  
                                requirements, or fuel that is added by OPARS to fulfill ETP emergency fuel  
                                requirements  
            1628:     Contingency fuel in lbs

LINE 13     TOT:     Total Fuel and Time calculations  
            34083:     Total Fuel in lbs (EN ROUTE + ALT + ENRT RES + HOLDING + CONT FUEL)  
            06/45:     Total Time available in hh/mm

# OPARS USER MANUAL

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LINE 14      FUEL BIAS: 1323: Fuel used for Taxi and Takeoff in lbs  
              DBIAS:            0: Departure Bias fuel in lbs  
              ABIAS:            0: Arrival Bias fuel in lbs  
              IBIAS:            0: Icing Bias fuel in lbs

LINE 15      ROUTING USED FOR THIS LEG:            [Printed Label]

LIKE 16      KMRY .. SAU C1173I BEBOP R464 MAGGI .. PHNL : Summary of routing

LINE 17      Column Headings:  
              WAYPOINT:    Checkpoint/Navaid Name  
              LEG TIME:    Time for this leg in hh/mm  
              FL:            Flight Level in hundreds of feet  
              TEMP:          Flight Level Temperature in degrees Celsius  
              WIND:          Wind direction and velocity (dddvv)  
              T/C:           True Course in degrees true  
              M/C:           Magnetic Course in degrees magnetic  
              M/H:           Magnetic Heading in degrees magnetic  
              DIST:          Leg Distance in NM  
              BURN:          Leg Fuel Burn (thousands - e.g., 12.5 =12,500 lbs)  
              T/BO:          Total Burn Out (thousands - e.g., 12.5 =12,500 lbs)  
              FUEL:          Specifies that all the blanks below apply to  
                                required fuel entries  
              P + 20:        Specifies that all the blanks below apply to  
                                required entries when 20 minutes past the waypoint

LINE 18      LAT:            Latitude of the Waypoint/Navaid  
              LONG:           Longitude of the Waypoint/Navaid  
              CUM TIME:      Cumulative leg time

# OPARS USER MANUAL

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G/S: Ground Speed  
TAS: True Airspeed  
MCH: Mach in thousandths (e.g., 762=.762 Mach)  
DREM: Distance remaining to landing  
FREM: Fuel remaining (thousands - e.g., 12.5=12,500 lbs)  
M/BO: Maximum Burn Out (thousands - e.g., 12.5=12,500) (plan burn + 10% + contingency)  
LUSE: Fuel used by the left engine  
RUSE: Fuel used by the right engine  
TUSE: Total fuel used (LUSE + RUSE)  
L: Fuel quantity in the left fuel tank  
R: Fuel quantity in the right fuel tank  
C: Fuel quantity in the center fuel tank  
F: Fuel quantity in the forward fuel tank  
A: Fuel quantity in the aft fuel tank  
T: Total fuel quantity (sum of five tanks)  
WIND: Actual Wind  
D/A: Wind Drift Angle  
M/C: Actual Magnetic Course  
M/H: Actual Magnetic Heading

LINE 19 EST / ACT: Estimated and actual zulu time crossing a waypoint

LINE 20 KMRY: Point of Departure name  
0/01: Leg time in h/mm  
4: Flight Level in hundreds of feet  
00: Temperature in degrees Celsius  
00000: Wind direction and velocity (dddvv)  
\*\*\*: True Course (\*\* means not computed for POD)  
\*\*\*: Magnetic Course (\*\* means not computed for POD)  
\*\*\*: Magnetic Heading (\*\* means not computed for POD)

# OPARS USER MANUAL

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1: Leg Distance in NM  
1.3: Leg Fuel Burn in thousands of lbs  
1.3: Total Burn Out in thousands of lbs  
FUEL: Specifies that all the blanks below apply to required fuel entries  
P + 20: Specifies that all the blanks below apply to required entries when 20 minutes past the waypoint

LINE 21: N3635.2: POD Latitude (36 degrees 35.2 minutes North)  
W12150.6: POD Longitude (121 degrees 50.6 minutes West)  
0/01: Leg Time in h/mm  
\*\*\*: Ground Speed(\*\*\* means not computed for POD)  
\*\*\*: True Airspeed (\*\*\* means not computed for POD)  
\*\*\*: Mach (\*\*\* means not computed for POD)  
2169: Distance remaining in NM  
32.8: Fuel remaining in thousands of lbs (e.g., 32,800)  
3.1: Maximum Burn Out in thousands of lbs  
LUSE: Fuel used by the left engine in lbs  
RUSE: Fuel used by the right engine in lbs  
TUSE: Total fuel used (LUSE + RUSE) in lbs  
L: Fuel quantity in the left fuel tank in lbs  
R: Fuel quantity in the right fuel tank in lbs  
C: Fuel quantity in the center fuel tank in lbs  
F: Fuel quantity in the forward fuel tank in lbs  
A: Fuel quantity in the aft fuel tank in lbs  
T: Total fuel quantity (sum of the five tanks) in lbs  
WIND: Actual Wind (ddd/vv)  
D/A: Actual Wind Drift angle  
M/C: Actual Magnetic Course in degrees magnetic  
M/H: Actual Magnetic Heading in degrees magnetic

# OPARS USER MANUAL

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LINE 22       \_\_\_:       Estimated Leg Time (Filled in by Flight Crew)  
              \_\_\_:       Actual Leg Time (Filled in by Flight Crew)  
              \_\_\_:       Flight Level (Filled in by Flight Crew)  
              \_\_\_:       Temperature (Filled in by Flight Crew)  
              \_\_\_:       Wind direction and velocity (Filled in by Flight Crew)  
              \_\_\_:       Fuel Remaining (Filled in by Flight Crew)  
              \_\_\_:       LUSE (Filled in by Flight Crew)  
              \_\_\_:       RUSE (Filled in by Flight Crew)  
              \_\_\_:       TUSE (Filled in by Flight Crew)  
              \_\_\_:       L (Filled in by Flight Crew)  
              \_\_\_:       R (Filled in by Flight Crew)  
              \_\_\_:       C (Filled in by Flight Crew)  
              \_\_\_:       F (Filled in by Flight Crew)  
              \_\_\_:       A (Filled in by Flight Crew)  
              \_\_\_:       T (Filled in by Flight Crew)  
              \_\_\_:       Wind direction (Filled in by Flight Crew)  
              \_\_\_:       D/A (Filled in by Flight Crew)  
              \_\_\_:       Magnetic Course (Filled in by Flight Crew)  
              \_\_\_:       Magnetic Heading (Filled in by Flight Crew)

LINE 23 - LINE 79   Covers remaining checkpoints and Point of Arrival

LINE 80 - LINE 85   Defines abbreviations for OPARS inserted points

LINE 86   FOLLOWING AIRSPACES PENETRATED

LINE 87   FIR BOUNDARY: KZ   /KZOA   Which Boundary Crossed  
          TIME: 00+48           Time in hours/minutes of Crossing  
          POSITION: N36265,W127000 Latitude/Longitude of Crossing

# OPARS USER MANUAL

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LINE 88    FIR BOUNDARY: KZOA/PHZH    Which Boundary Crossed  
          TIME: 04+30                    Time in hours/minutes of Crossing  
          POSITION: N24312,W153532    Latitude/Longitude of Crossing

LINE 89    FOLLOWING AIR DEFENSE IDENTIFICATION ZONES PENETRATED

LINE 90                            TIME                    POSITION

LINE 91    ENTERING: WEST CONUS ADIZ    Name of ADIZ Entered  
          00+19:                    Time into flight in hours/minutes of entry  
          N37383,W123093:            Latitude/Longitude of entry

LINE 92    LEAVING : WEST CONUS ADIZ    Name of ADIZ Exiting  
          01+04:                    Time into flight in hours/minutes of exit  
          N35466,W129117:            Latitude/Longitude of exit

LINE 93-94 Additional ADIZ entered and exited

LINE 95            TOTAL        1ST HALF        2ND HALF:            [Printed Label]

LINE 96            WIND FACTOR CRUISE: Wind factors at the cruise altitudes  
          -20KTS:        Total wind factor is 20 knot headwind  
          -19KTS:        First half wind factor is 19 knot headwind  
          -21KTS:        Second half wind factor is 21 knot headwind

LINE 97            FL200:            Wind factors at 20000 feet  
          -1KTS:        Total 20000 ft wind factor is 1 knot headwind  
          2KTS:        First half 20000 ft wind factor is 2 knot tailwind  
          -4KTS:        Second half 20000 ft wind factor is 4 knot headwind

```

LINE 98      FL150:      Wind factors at 15000 feet
              4KTS:      Total 15000 ft wind factor is 4 knot tailwind
              4KTS:      First half 15000 ft wind factor in 4 knot tailwind
              4KTS:      Second half 15000 ft wind factor is 4 knot tailwind

```

LINE 96                      Cruise levels (Actual flight levels for track)

LINE 97                      Single Engine (SE) Altitude

LINE 98 Pressure Loss (PL) Altitude

TOTAL is for entire tracks.

At Cruise levels (Line 96) 1ST HALF / 2ND HALF refer to 1/2 total track distance.

At SE and PL Altitudes (Line 97-98) 1ST HALF / 2ND HALF refer to ETP.

In example, FL200 and FL150 are SE Altitude and PL Altitude for C9B aircraft.

LINE 99    ADDITIONAL ALTITUDE DATA:                    [Printed Label]

LINE 100	FL/FUEL/ETE:	Fuel and Time estimates for altitudes other than the	selected cruise altitude
	(310/ 27600/ 05+24):	Cruise at 31000 it requires 27600 lbs of fuel	and 5 hours and 24 minutes
	(280/ 28400/ 05+34):	Cruise at 28000 it requires 28400 lbs of fuel	and 5 hours and 34 minutes
	(260/ 29000/ 05+38):	Cruise at 26000 ft requires 29000 lbs of fuel	and 5 hours and 38 minutes

LINE 101 EMERGENCY DATA AND FUEL REQUIREMENTS: [Printed Label]

LINE 102 Normal Configuration: [Printed Label]

LINE 103	DIST	TIME	TIME	FUEL USED/REMAINING
----------	------	------	------	---------------------

LINE	104	POSITION	FM KMRY	TO KMRY	TO PHNL

# OPARS USER MANUAL

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DIST FM KMRV: Distance from 2 Engine ETP back to POD (KMRV)  
TIME TO KMRV: Time from 2 Engine ETP back to POD (KMRV)  
TIME TO PHNL: Time from 2 Engine ETP forward to POA (PHNL)

LINE 105 ETP N30393 W142238 1158 02+32 02+32 16418/17664

ETP: 2 Engine Equal Time Point

N30393: Latitude of 2 Engine Equal Time Point 30 degrees 39.3 minutes North

W142238: Longitude of 2 Engine Equal Time Point 142 degrees 23.8 minutes West

1158: Distance in nautical miles from 2 Engine ETP back to POD (KMRV)

02+32: Time in hours/minutes from 2 Engine ETP back to POD (KMRV)

02+32: Time in hours/minutes from 2 Engine ETP forward to POA (PHNL)

16418/17664: Fuel in lbs used to get to the 2 Engine ETP/Fuel in lbs remaining at the 2 Engine ETP

LINE 106 Single Engine (FL200):  
(FL200): Single Engine Flight Level

LINE 107 DIST TIME TIME FUEL USED/REMAINING

LINE 108 POSITION FM KMRV TO KMRV TO PHNL

DIST FM CYYT: Distance from Single Engine ETP back to POD (KMRV)

TIME TO CYYT: Time from Single Engine ETP back to POD (KMRV)

TIME TO LERT: Time from Single Engine ETP forward to POA (PHNL)

LINE 109 ETP N31148 W141076 1083 03+19 03+19 15595/18488

ETP: Single Engine Equal Time Point

N31148: Latitude of Single Engine Equal Time Point 31 degrees 14.8 minutes North

# OPARS USER MANUAL

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W141076: Longitude of Single Engine Equal Time Point 141 degrees 7.6 minutes West  
1083: Distance in nautical miles from Single Engine ETP back to POD (KMRY)  
03+19: Time in hours/minutes from Single Engine ETP back to POD (KMRY)  
03+19: Time in hours/minutes from Single Engine ETP forward to POA (PHNL)  
15595/18488: Fuel in lbs used to get to the Single Engine ETP/Fuel in lbs remaining at the Single Engine ETP

LINE 110 Pressure Loss (FL150):  
(FL150): Pressure Loss Flight Level

LINE 111		DIST	TIME	TIME	FUEL USED/REMAINING
----------	--	------	------	------	---------------------

LINE 112	POSITION	FM KMRY	TO KMRY	TO PHNL
----------	----------	---------	---------	---------

LINE 113	ETP	N31204 W140543	1071	03+13	03+13	15450/18633
----------	-----	----------------	------	-------	-------	-------------

ETP: Pressure Loss Equal Time Point  
N31204: Latitude of Pressure Loss Equal Time Point  
31 degrees 20.4 minutes North  
W140543: Longitude of Pressure Loss Equal Time Point  
140 degrees 54.3 minutes West  
1071: Distance in nautical miles from Pressure Loss ETP back to POD (KMRY)  
03+13: Time in hours/minutes from Pressure Loss ETP back to POD (KMRY)  
03+13: Time in hours/minutes from Pressure Loss ETP forward to POA (PHNL)  
15450/18633: Fuel in lbs used to get to the Pressure Loss ETP/Fuel in lbs remaining at the Pressure Loss ETP

LINE 114 SE ETP EMERGENCY FUEL REQUIRED/AVAILABLE/ON DECK 16769/18488/ 4219

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16769: Fuel in lbs required at Single Engine Equal Time Point to continue to the POA or return to the POA at the Single Engine Altitude

18488: Fuel in lbs available at the Single Engine Equal Time Point

4219: Fuel in lbs remaining On Deck after continuing to the POA or returning to the POA from the Single Engine Equal Time Point at the Single Engine Altitude

LINE 115 PL ETP EMERGENCY FUEL REQUIRED/AVAILABLE/ON DECK 18633/18633/ 2500

18633: Fuel in lbs required at Pressure Loss Equal Time Point to continue to the POA or return to the POA at the Pressure Loss Altitude

8633: Fuel in lbs available at the Pressure Loss Equal Time Point

2500: Fuel in lbs remaining On Deck after continuing to the POA or returning to the POA from the Pressure Loss Equal Time Point at the Pressure Loss Altitude

LINE 116 CONTINGENCY FUEL INCREASED BY 1628 lbs FOR PRESSURE LOSS REQUIREMENTS  
The amount of fuel added to contingency fuel to meet engine failure requirements

LINE 117 ADDITIONAL FUEL REQUIREMENTS FOR ENGINE FAIL : 0 lbs (KMRV/PHNL)  
Extra lbs of fuel required due to Engine Failure between KMRV and PHNL

LINE 118 ADDITIONAL FUEL REQUIREMENTS FOR PRESSURE LOSS: 1628 lbs (KMRV/PHNL)  
Extra lbs of fuel required due to Pressure Loss between KMRV and PHNL

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## B.17 FORMAT OF EMERGENCY DATA IN OUTPUT TRAILER SECTION

All flight plan output formats will include Emergency Data for every leg outside the conterminous United States (CONUS).

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### B.17.1 EMERGENCY DATA EXAMPLE

```
1)          ***** EMERGENCY DATA *****

2)          Altitude for          Altitude for
3)          NORMAL (FL410)        ENGINE FAIL (FL200)
4)          DIST      TIME        DIST      TIME
5)          ETP        528    01+12        522    01+12
6)          PSR        528    01+12        440    01+01
7)          PNR        747    01+40        622    01+25

8)          LAT      LONG  TO  ON DECK/ ALT /TAS/FFLOW/WFAC
9) ENGINE FAIL AT ETP N39455 E003515 LICZ      285/20000/307/ 3405/ 41
10)                                     LERT      404/20000/310/ 3335/ -2
11) PRESS  LOSS AT ETP N39499 E004065 LICZ      247/13000/318/ 3494/ 34
12)                                     LERT      202/13000/322/ 3520/ 4
```

---

### EMERGENCY DATA EXPLANATION

```
LINE 1          ***** EMERGENCY DATA *****
```

```
LINE 2          Altitude for          Altitude for
LINE 3          NORMAL (FL410)        ENGINE FAIL (FL200)
```

Altitude for Normal Configuration (Flight Level 410)  
Altitude for Engine Failure (Flight Level 200)

```
LINE 4          DIST      TIME        DIST      TIME
```

- Heading

```
LINE 5  ETP - Equal Time Point - The point along the track at which it will
        take an equal amount of time to return to the POD as it does to
        continue to the POA. The point is given in distance (nautical
        miles) and time (hours and minutes) from the POD.
```

Distance and time to return to POD: 528 NM and 1 hour 12 minutes.

ENGINE FAIL - The point along the track at which it will take an equal amount of time to return to the POD as it does to continue to the POA at a reduced TAS and altitude due to engine failure. The point is given in distance (nautical miles) and time (hours and minutes) from the POD.

Distance and time to return to POD with an engine loss:

# OPARS USER MANUAL

---

522 NM and 1 hour 12 minutes.

Line 6 PSR - Point of Safe Return - The point along the track from which it would be possible to return to the POD and arrive with the destination fuel reserve.

Distance and time to return to POD: 528 NM and 1 hour 12 minutes.

ENGINE FAIL - The point along the track from which it would be possible to return to the POD and arrive with the destination fuel reserve at a reduced TAS and altitude due to engine failure.

Distance and time to return to POD with an engine failure:  
622 NM and 1 hour 25 minutes.

Line 7) PNR - Point of No Return - The point along the track from which it would be possible to return to the POD with no fuel remaining upon arrival. At any point past PNR, it would not be possible to return to the POD.

Distance and time to return to POD: 747 NM and 1 hour 40 minutes.

ENGINE FAIL - The point along the track from which it would be possible to return to the POD with no fuel remaining upon arrival at a reduced TAS and altitude due to engine failure.

Distance and time to return to POD with an engine failure:  
622 NM and 1 hour 25 minutes.

Line 8) TO - The name of the airport for which the information applies (either the POD or POA).

RESERVE - The amount of fuel remaining (lbs) upon arrival at the designated airport if an engine loss occurred at the ETP. This value is pessimistic as no correction is made for driftdown from cruise altitude or for descent at destination.

ALT - The altitude at which the flight continues or returns with the loss of an engine.

TAS - The true airspeed maintained after the loss of an engine. This value is a constant interpolated from NATOPS data for the specific aircraft.

FFLOW - The engine loss fuel flow from which the reserve is calculated. This value is a constant interpolated from NATOPS data for the specific aircraft.

WFAC - The total wind factor based upon the forecast winds at the engine loss altitude.

Line 9) ENGINE FAIL AT ETP - Performance information assuming the loss of an engine at ETP for continuing on to the POA and for returning to the POD.

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Performance data to continue to LICZ:

reserve 285 lbs/ altitude 20000 ft./ TAS 307 kts./  
fuel flow 3405 lbs per hour/ total wind factor 41 kts.

Performance data to return to LERT:

reserve 404 lbs/ altitude 20000 ft./ TAS 310 kts./  
fuel flow 3335 lbs per hour/ total wind factor -2 kts.

Note: Engine failure at ETP performance information is based on an engine loss at the normal aircraft configuration ETP.

Line 10) PRESS LOSS AT ETP - Performance information assuming the loss of pressurization at ETP and the flight either continues on to the POA or returns to the POD at a lower altitude in order to maintain proper cabin pressure.

Performance data to continue to LICZ:

reserve 285 lbs/ altitude 13000 ft./ TAS 318 kts./  
fuel flow 3494 lbs per hour/ total wind factor 34 kts.

Performance data to return to LERT:

reserve 247 lbs/ altitude 13000 ft./ TAS 322 kts./  
fuel flow 3520 lbs per hour/ total wind factor 4 kts.

Note: Pressure loss at ETP performance information is based on pressurization loss at the normal aircraft configuration ETP.

## B.18 SPECIAL USE AIRSPACE REPORTING

There are seven categories of Special Use Airspaces:

- Alert
- Danger
- Military Ops
- Prohibited
- Restricted
- Reserved
- Warning

In cases where Special Use Airspace has been penetrated, the OPARS flight plan will report the following information:

- FLIP assigned Special Use Airspace Identifier
- Altitude limits
- Special Use Airspace Name/Description
- What type of Special Use Airspace

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- Conditional information about the Special Use Airspace (i.e. time, date, by NOTAM)

Types of conditional information:

- Reason for a temporary condition
- By NOTAM (Notice to Airmen). It is the pilot's responsibility to check the NOTAM System<sup>2</sup> for possible restrictions.
- CONT (Continuous)
- Dates, Days and/or Times of the Restriction

The following portion from the trailer of an OPARS Flight Plan shows Special Use Airspace Areas that will be penetrated.

FOLLOWING AIRSPACES PENETRATED

FIR BOUNDARY: EDDF/EBBU TIME: 00+05 POSITION: N50040,E006081

FOLLOWING SPECIAL USE AREAS PENETRATED

(EB)TRA16A 4500 - 50000 FT MTRA SOUTH  
TEMPORARY : TMPRY RESERVED FOR MIL FLT FOR PERIODS

(EB)TRA2 10000 - 25000 FT SOMAL/TINTIGNY  
TEMPORARY : BY NOTAM

(EB)TRA19 17500 - 19500 FT DORTTIE SECTOR A/B  
TEMPORARY : CONT

EBR19 2500 - 4500 FT GOSSELIES  
RESTRICTED : CONT

(EB)TRA1 10000 - 30000 FT FARCIENNES MACQUENOISE  
TEMPORARY : BY NOTAM

LFCBA1C 11500 - 50000 FT  
TEMPORARY : CONT

(EB)TRA10 4500 - 20000 FT WESTLAND AREA  
RESTRICTED : MON-FRI 0730-1600Z++

EBD31 0 - 2500 FT WESTROZEBEKE-HOUTHULST  
DANGER : CONT

	TIME	POSITION	ALTITUDE
ENTERING: (EB) TRA16A	00+09	N50082,E005321	20000 FT
CROSSING: (EB) TRA2	00+11	N50094,E005226	20000 FT
ENTERING: (EB) TRA19	00+11	N50095,E005212	20000 FT
LEAVING : (EB) TRA19	00+12	N50102,E005154	20000 FT
LEAVING : (EB) TRA16A	00+15	N50134,E004480	20000 FT

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<sup>2</sup> U.S. NOTAM Office for DOD flights only -- <http://www.notams.jcs.mil/>

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ENTERING: EBR19	00+17	N50163,E004350	20000 FT
CROSSING: (EB)TRA1	00+18	N50193,E004280	20000 FT
LEAVING : EBR19	00+18	N50210,E004239	20000 FT
ENTERING: LFCBA1C	00+27	N50466,E003240	16133 FT
ENTERING: (EB)TRA10	00+27	N50471,E003230	15778 FT
LEAVING : (EB)TRA10	00+31	N50563,E003013	7969 FT
LEAVING : LFCBA1C	00+31	N50565,E003007	7783 FT
ENTERING: EBD31	00+31	N50573,E002588	7078 FT
LEAVING : EBD31	00+32	N50583,E002564	6227 FT

=====

END OF TRAILER

END OF DOWNLOAD

---

## SPECIAL USE AIRSPACE SECTION EXPLANATION

The first part reports the SUA areas that are encountered.  
For example:

(EB)TRA16A - FLIP assigned airspace identifier  
4500 - 50000 FT - Altitude restrictions in feet  
MTRA SOUTH - Name of SUA  
TEMPORARY - SUA type  
TMPRY RESERVED FOR MIL FLT FOR PERIODS - Conditional information

The second part reports the entrance and exit of the SUA areas. A crossing is reported as a single entry. The time into the flight, the position, and the altitude are also reported.  
For Example:

ENTERING: (EB)TRA16A - FLIP assigned airspace identifier  
00+09 - Entered the restricted area 9 minutes into the flight  
N50082,E005321 - Lat/Lon of area (degrees, minutes, tenths of minutes)  
20000 FT - Altitude that OPARS computed

CROSSING: (EB)TRA2 - FLIP assigned airspace identifier  
00+11 - Crossed the restricted area 11 minutes into the flight  
N50094,E005226 - Lat/Lon of area (degrees, minutes, tenths of minutes)  
20000 FT - Altitude that OPARS computed

ENTERING: (EB)TRA19 - FLIP assigned airspace identifier  
00+11 - Entered the restricted area 11 minutes into the flight  
N50095,E005212 - Lat/Lon of area (degrees, minutes, tenths of minutes)  
20000 FT - Altitude that OPARS computed

LEAVING: (EB)TRA19 - FLIP assigned airspace identifier  
00+12 - Left the restricted area 12 minutes into the flight  
N50102,E005154 - Lat/Lon of area (degrees, minutes, tenths of minutes)  
20000 FT - Altitude that OPARS computed

### C. ROUTING OPTIONS

## C.1 DIRECT

## C.2 OPTIMIZE

### C.3 NORTH ATLANTIC

```
Examples:  North Atlantic between POD to POA                > NA,ENDROUTE
           North Atlantic between POD and MASIT Waypoint    > NA,MASIT
```

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## C.4 RHUMBLINE

Routing code "R" – Rhumb line routing is for a transoceanic flight at a constant true heading. A rhumb line will cross all meridians at the same oblique angle. Checkpoints are provided every 5 degrees of latitude or longitude unless the flight exceeds a total of 45 degrees latitude or longitude, then checkpoints are every 10 degrees.

**Note:** When using the POA as part of the routing couplet, do not type ENDRROUTE, it will be placed automatically by OPARS when Finish Routing is selected.

Examples: Rhumb line between POD to POA > R, ENDRROUTE  
Rhumb line between POD and Salinas VORTAC > R, SNS

## C.5 JET ROUTES

Routing code "\$J" - This routing is for normal transit continuously using high altitude jet routes. It provides an optimized flight path within the continuous jet route constraints. Checkpoints are provided at high altitude Navaids and waypoints.

**Note:** This is the recommended routing to use in Europe.

Examples: Jet Routes between POD to POA > \$J, ENDRROUTE  
Jet Routes between POD and CH VOR-DME > \$J, CH

## C.6 ON-OFF JET ROUTES

Routing code "\$R" - Uses discontinuous high altitude jet routes. When a break in jet routes occurs "\$R" will route Direct between Navaids to a maximum of 300 NM and re-enter the jet route structure. It provides an optimized flight path within jet route constraints. Checkpoints are Navaids and waypoints. Outside of CONUS, "\$R" defaults to "\$J."

Examples: On-Off Jet Routes between POD to POA > \$R, ENDRROUTE  
On-Off Jet Routes between POD and SNS VORTAC > \$R, SNS

## C.7 NAMED JET ROUTE

Normally used in conjunction with a User specified routing structure. Named high altitude jet routes are used to allow the pilot to travel a specified course. When jet routes are used, high altitude entry and exit points on the jet route must be designated. This routing will provide checkpoints at Navaids and Waypoints along the named jet route.

Examples: Direct from POD to SNS VORTAC > D, SNS  
Jet Route 126 between SNS VORTAC and LAX VORTAC > J126, LAX  
Direct from LAX VORTAC to POA > D, ENDRROUTE

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## D. OPARS DATA ELEMENTS

### D.1 INTRODUCTION

This appendix contains descriptions of all data elements that can be submitted when requesting an OPARS flight plan. A list of the OPARS data elements is followed by an explanation of each data element.

Each element in this section is designated as one of three types: **Mandatory**, **Optional**, or **Automatic default** for OPARS. Entry formats are defined and default values are identified, where applicable.

**MANDATORY** – Item must be entered for OPARS to produce a flight plan.

**OPTIONAL** – Additional information to tailor specific flight requirements or mission profiles.

**AUTOMATIC DEFAULT** – Determined by request type or user configuration values.

### D.2 DATA ELEMENTS LIST

Table 4. OPARS Data Element List

Keyword	Type	User Interface Keyword	Dialog Title
ABIAS	OPTIONAL	ARRIVAL BIAS	REQUEST EDITOR (FUEL)
ACTYPE	<b>MANDATORY</b>	AIRCRAFT TYPE	UNIT DEFAULTS AND REQUEST EDITOR (GENERAL)
AERODB	AUTOMATIC DEFAULT		N/A
ALTRNAT	OPTIONAL	ALTERNATE	REQUEST EDITOR (ALTERNATE/DIVERT)
ATALT	<b>MANDATORY</b>	AT ALTITUDE ARRIVAL	REQUEST EDITOR (MISCELLANEOUS)
BIAS	<b>MANDATORY</b>	BIAS OPTIONS	REQUEST EDITOR (FUEL)
CALLSIGN	OPTIONAL	AIRCRAFT CALLSIGN	REQUEST EDITOR (GENERAL)
CARGOCH	OPTIONAL	CARGO CHANGE	REQUEST EDITOR (AIRCRAFT)
CLASS	AUTOMATIC DEFAULT	CLASSIFICATION	REQUEST EDITOR (GENERAL)

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Keyword	Type	User Interface Keyword	Dialog Title
CONFUEL	<b>MANDATORY</b> (for 9KB)	9KB CONFUEL	REQUEST EDITOR (FUEL)
DBIAS	OPTIONAL	DEPARTURE BIAS	REQUEST EDITOR (FUEL)
DC	OPTIONAL	DRAW COUNT	REQUEST EDITOR (FUEL)
DIVERT1	OPTIONAL	DIVERT AIRPORT #1	REQUEST EDITOR (ALTERNATE/DIVERT)
DIVERT2	OPTIONAL	DIVERT AIRPORT #2	REQUEST EDITOR (ALTERNATE/DIVERT)
DIVERT3	OPTIONAL	DIVERT AIRPORT #3	REQUEST EDITOR (ALTERNATE/DIVERT)
EFF	OPTIONAL	EFFICIENCY FACTOR	REQUEST EDITOR (AIRCRAFT OPTIONS)
FLTDATE/TIME	<b>MANDATORY</b>	FLIGHT DATE AND TIME	REQUEST EDITOR (POD/POA)
FUELLD	<b>MANDATORY</b>	FUEL LOAD	REQUEST EDITOR (FUEL)
FUELTYPE	<b>MANDATORY</b>	FUEL TYPE	REQUEST EDITOR (FUEL)
HOLDCASE	<b>MANDATORY</b> (9KB)	9KB HOLD CASE	REQUEST EDITOR (FUEL)
IBIAS	OPTIONAL	ICE BIAS	REQUEST EDITOR (FUEL)
INCRUALT	OPTIONAL	INITIAL CRUISE ALTITUDE	REQUEST EDITOR (ALTITUDE)
INFLTR1	OPTIONAL	FIRST IN-FLIGHT TIME	REQUEST EDITOR (IN- FLIGHT FUEL)
INFLTR2	OPTIONAL	SECOND IN-FLIGHT TIME	REQUEST EDITOR (IN- FLIGHT FUEL)
INFLTR3	OPTIONAL	THIRD IN-FLIGHT TIME	REQUEST EDITOR (IN- FLIGHT FUEL)
LEG	<b>MANDATORY</b>	LEG	REQUEST EDITOR (GENERAL)
LOWRALT	OPTIONAL	LOWER ALTITUDE	REQUEST EDITOR (ALTITUDE)
MBF	OPTIONAL	MAX BURNABLE FUEL	REQUEST EDITOR (MISC)
MINRES	<b>MANDATORY</b> (INFLTR1=C)	MINIMUM RESERVE	REQUEST EDITOR (IN- FLIGHT FUEL)

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Keyword	Type	User Interface Keyword	Dialog Title
OMODE	AUTOMATIC DEFAULT	OUTPUT MODE	OPARS FLIGHT PLAN DISPLAY
OPWT	<b>MANDATORY</b>	OPERATION WEIGHT	REQUEST EDITOR (AIRCRAFT)
PILOT	<b>MANDATORY</b>	PILOT'S NAME	REQUEST EDITOR (GENERAL)
POA	<b>MANDATORY</b>	POINT OF ARRIVAL	REQUEST EDITOR (POD/POA)
POD	<b>MANDATORY</b>	POINT OF DEPARTURE	REQUEST EDITOR (POD/POA)
REFUEL	OPTIONAL	ON-GROUND REFUEL	REQUEST EDITOR (FUEL)
RESERVE	OPTIONAL	NATOPS MINIMUM RESERVE	REQUEST EDITOR (FUEL)
ROUTE INPUT	<b>MANDATORY</b>	ROUTE INPUT	REQUEST EDITOR (POD/POA)
ROUTING 0-99	<b>MANDATORY</b>		REQUEST EDITOR (WEATHER)
SPERF	<b>MANDATORY</b> (SPERF)	SPERF	REQUEST EDITOR (SPERF)
SPERF ALT	<b>MANDATORY</b> (SPERF)	SPERF ALTITUDE	REQUEST EDITOR (SPERF)
SPERF BIAS	<b>MANDATORY</b> (SPERF)	SPERF BIAS	REQUEST EDITOR (SPERF)
TAS	OPTIONAL	TRUE AIR SPEED	REQUEST EDITOR (AIRCRAFT OPTIONS)
TEMP	OPTIONAL	TEMPERATURE DEVIATION	REQUEST EDITOR (WEATHER)
TOA	<b>MANDATORY</b> (IF NO TOD)	TIME OF ARRIVAL	REQUEST EDITOR (POD/POA)
TOD	<b>MANDATORY</b>	TIME OF DEPARTURE	REQUEST EDITOR (POD/POA)
TOG	<b>MANDATORY</b> (MULTI-LEG)	TIME ON GROUND	REQUEST EDITOR (POD/POA)
UNIT	OPTIONAL	UNIT NAME	UNIT DEFAULTS AND REQUEST EDITOR (GENERAL)
UPPRALT	OPTIONAL	UPPER ALTITUDE	REQUEST EDITOR (ALTITUDE)
USER	AUTOMATIC DEFAULT	USER ID	OPARS COMMUNICATION SETUP

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Keyword	Type	User Interface Keyword	Dialog Title
VERSION	AUTOMATIC DEFAULT	VERSION	N/A
WINDF	OPTIONAL	WIND	REQUEST EDITOR (WEATHER)
<b>The following refer to Mission Leg Only:</b>			
BOM	OPTIONAL	BEGINNING OF MISSION	REQUEST EDITOR (MISSION LEG)
EOM	<b>MANDATORY</b>	END OF MISSION	REQUEST EDITOR (MISSION LEG)
FUEL CH	OPTIONAL	FUEL CHANGE	REQUEST EDITOR (MISSION LEG)
INALT	<b>MANDATORY</b>	IN ALTITUDE	REQUEST EDITOR (MISSION LEG)
LOM	OPTIONAL	LENGTH OF MISSION	REQUEST EDITOR (MISSION LEG)
MINENG	OPTIONAL	MINIMUM ENGINES	REQUEST EDITOR (MISSION LEG)
OUTALT	<b>MANDATORY</b>	OUT ALTITUDE	REQUEST EDITOR (MISSION LEG)
TIMEIN	OPTIONAL	TIME IN	REQUEST EDITOR (MISSION LEG)
TIMEOUT	OPTIONAL	TIME OUT	REQUEST EDITOR (MISSION LEG)

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## D.3 DATA ELEMENT DESCRIPTIONS

Table 5. OPARS Data Element Descriptions

Data Element	Description	Default	Format
ABIAS	Arrival Bias is used to account for extra fuel burned, in pounds, during the arrival phase of the flight. All of this extra fuel must be carried during the climb and cruise portions of the flight, and is burned after starting the descent to the destination.		####,mm lbs, min
ACTYPE	Entered on the 1 <sup>st</sup> leg only. Choose the appropriate aircraft from the list of supported aircraft. If your aircraft is not on the list, then select SPERF (Special Performance). You will be required to provide values for: Time to Climb, Distance to Climb, Fuel to Climb, Cruise True Airspeed, Cruise Fuel Flow, and Aircraft Name.	Automatically entered by OPARS from the Unit Default information	Contiguous alphanumeric characters
AERODB	The effective dates of the aeronautical database.	Automatically entered by OPARS	dd MMM yyyy-dd MMM yyyy
ALTRNAT	Alternate is used to specify an alternate airport when one is required for filing purposes. Enter the ICAO code for your alternate airport. The fuel calculated for a flight with an alternate will be enough to fly from the point of departure to the point of arrival, then to the alternate and arrive at the alternate with the specified amount of fuel reserve.		4 to 7 alphanumeric characters
ATALT	Used on a multi-leg flight when you don't want to land at a POA. Specifies altitude in feet over POA. In conjunction with the Time On The Ground of 0 hrs and 00 mins, informs the flight planner to not land at this POA.		3 to 6 numeric characters to specify feet of altitude

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Data Element	Description	Default	Format
BIAS	Bias is used to account for the amount of fuel burned for engine start, taxi, run-up, and takeoff.	Value contained in the OPARS Aircraft Database	1 to 99999 lbs
BOM	Beginning of Mission. The point from which a Mission Leg starts.		ICAO callsign, Lat/Long, Navaid, or waypoint
CALLSIGN	Aircraft radio callsign for the assigned mission	Blank	alphanumeric character string
CARGOCH	<p>Cargo Change is used to define the amount of cargo for a flight leg. There are three choices for Cargo entry:</p> <p><i>Do Not Use</i> – Select if no cargo change is to be made. This is the default entry.</p> <p><i>Cargo Change Entered</i> – Choosing this option requires that you type-in the amount of cargo to be on-loaded or off-loaded on the current flight leg. A positive value is the amount of cargo to be added. A negative value indicates cargo off-load on a leg. A zero indicates no cargo change, and the amount from the previous leg will be carried over.</p> <p><i>OPARS Calculate</i> – If this option is selected, OPARS will load the maximum amount of cargo that can be carried on the current flight leg.</p>	'Do Not Use'	-999999 to 999999 lbs
CLASS	Classification of the flight plan. If other than Unclassified, this field also contains Special Handling and Declassification instructions (separated by spaces).	Unclassified	Select from List
CONTFUEL	Contingency fuel. Extra fuel specified by crew in addition to the required reserve.	0	0 to 20000 lbs

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Data Element	Description	Default	Format
DBIAS	Departure Bias is used to account for extra fuel burned during the departure phase of the flight. All of this extra fuel is burned prior to achieving cruise altitude.	0	####,mm lbs, min
DC	Drag Count is used to account for carrying external stores or for nonstandard aircraft configurations. Refer to the selected aircraft NATOPS Manual for drag count values. Accurate drag count entries are very important to correctly calculate aircraft performance. <i>Drag Count is mandatory for some aircraft.</i>	Value contained in the OPARS Aircraft Database	-999 to 999
DIVERT1, DIVERT2, DIVERT3	Up to 3 divert airports may be entered. When Divert Airports are entered, the divert airports requested, plus the point of departure and the point of arrival are evaluated along the route of the flight to determine the points along the track where each of the divers is the closest to use as a divert. The closest is defined as the least time. The results are distances along the route of the flight measured from the point of departure. Two distances are determined for each airport. The first is the distance along the track where the airport becomes the closest, and the second is the distance where the airport is no longer the closest.		ICAO callsign or Lat/Long
EFF	Efficiency Factor. Used to specify efficiency as a percentage value. An efficiency entry will modify fuel flow during cruise. The values listed will provide the following results:  80 - 90 means less efficient than normal. The result will be more fuel flow.  100 means normal engine. The result is no change to the fuel flow.  101 – 120 means more efficient than normal. The result will be less fuel flow.	100	80 – 120 percentage

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Data Element	Description	Default	Format
EOM	End of Mission. Specifies point at which a mission leg ends.		ICAO callsign, Lat/Long, Navaid, or waypoint
FLTDATE & TIME	You must designate this entry as either a Time of Departure or a Time of Arrival by clicking on the Departure or Arrival button. The default selection is Time of Departure. The default for the Flight Date and Time is the current date and time (in UTC) rounded to the next hour. These may be changed by clicking on the up and down arrow, or by typing in new values. For multi-leg flights, No Time On This Leg may be selected for intermediate POAs to have OPARS calculate departure/arrival times.	Current date and time (Time of Departure)	mm/dd/yyyy  hh:mm:ss
FUEL CH	Fuel Change is used to identify the amount of fuel, in pounds, that is available for the Mission Leg. If no entry is made, OPARS will calculate the amount of fuel available for the Mission Leg. This amount will be: (Fuel Load) – (fuel required for leg 1) – (fuel required for leg 3).	Blank	-999999 to +999999 lbs
FUELLD	One of the Fuel Options, Fuel Load is used to identify the amount of fuel, in pounds, that is loaded on the aircraft.		0 to 999999 lbs

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Data Element	Description	Default	Format
FUEL OPTIONS	<p>One of the following should be selected:</p> <p>Fuel Load – Enter the amount of fuel in pounds.</p> <p>Fuel Maximum – The maximum amount of fuel in pounds will be loaded by OPARS.</p> <p>Fuel Reserve – The amount of fuel in pounds that you want to have remaining at your destination.</p> <p>Calculate Fuel Reserve – Fuel reserve will be calculated by OPARS based on the following criteria:</p> <p>10 percent of the fuel required to fly from POD to POA then to ALTRNAT (if requested)</p> <p>Fuel required for 20 minutes of flight time at 10,000 feet.</p> <p>Minimum NATOPS or community-defined, if applicable to your aircraft type.</p>		lbs
FUELTYPE	Standard aviation fuel type to be used by the aircraft.	Value contained in the OPARS aircraft type database.	1-5 alphanumeric characters selected from list.
HOLDCASE	<p>This is used to define the amount of holding fuel required at the destination based upon the following criteria:</p> <p><i>Case I</i> – 45 minutes holding fuel at maximum endurance at 10,000 feet</p> <p><i>Case II</i> - 45 minutes holding fuel at maximum endurance at 10,000 feet with an alternate airport required</p> <p><i>Case III</i> – 75 minutes holding fuel at maximum endurance at 20,000 feet</p>	Case I	checkbox

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Data Element	Description	Default	Format
IBIAS	Ice Bias is used to specify the amount of fuel burned during the cruise portion of the flight for anti-icing/de-icing equipment. The amount specified is burned proportionally during the cruise portion of the flight.	0	1 – 99999 lbs
INALT	Used to specify the aircraft altitude at the beginning of the Mission Leg.		1000 to 99999 ft.
INCRUALT	Initial Cruise Altitude is used to specify the altitude for initial level-off after takeoff. In the absence of an Upper Altitude or Lower Altitude, altitude is controlled by the optimizer. If the value entered for Initial Cruise Altitude is above the operational capabilities of the aircraft, OPARS will select the highest altitude that the aircraft is capable of, based on the direction of flight.	Level-off made at optimum altitude as constrained by FAA clearance criteria, if applicable.	1000 to 99999 ft
INFLTR1, INFLTR2, INFLTR3	In-flight refueling. Specified time after takeoff on a leg and amount of fuel transferred in pounds. A maximum of three in-flight refuelings may be entered. Use 'C' for any entry to have OPARS calculate the value.	None	hh+mm,xxxx hrs, min, lbs
LEG	Number of flight legs. Used to designate the number of flight legs.	1 Standard Leg	Maximum number of 6 legs
LOM	Length of Mission is used to specify the duration of the Mission Leg in hours and minutes. If no entry is made, OPARS will calculate the amount of time available for the Mission Leg.		hh+mm hrs, mins
LOWRALT	If a Lower Altitude is entered, the flight plan will not consider altitudes below that altitude.		1000 to 99999 ft.

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Data Element	Description	Default	Format
MBF	Maximum Burnable Fuel defines the maximum amount of fuel, in pounds, that the aircraft can carry. It is used to let the flight planner know that the aircraft can carry either more or less fuel than the standard internal fuel load for that aircraft model. The most common use is to indicate that external or auxiliary fuel tanks are installed on the aircraft. If a fuel load is entered, it becomes the Max Burnable Fuel.	NATOPS specified internal fuel capacity	1 to 999999 lbs
MINENG	<i>This is an optional entry for a Mission Leg for P-3 aircraft only.</i> This item is used to specify the minimum number of engines you will accept for loiter on the Mission Leg. Acceptable entries are 4, 3, and 2.	3	4, 3, or 2 engines
MINRES	Minimum in-flight reserve. Used to determine when and where a calculated in-flight refueling will occur. When the fuel burned reduces the fuel to the MINRES, the aircraft is in-flight refueled to the maximum fuel capacity of the aircraft.		0 to 99999 lbs
OMODE	Output Mode.	1KB	1 of 12 preset output formats
OPWT	Used to specify the Operational Weight of the aircraft in pounds. Operational Weight is defined as the dry weight of the aircraft plus the weight of the crew, their baggage, and miscellaneous equipment. It does not include fuel or cargo. The default value for the selected aircraft is automatically entered, but you may change it. The sum of the operational weight plus fuel load plus cargo can exceed the maximum allowable gross weight of the aircraft.	Value contained in the OPARS Aircraft Database	1 to 999999 lbs
OUTALT	Used to specify the aircraft altitude at the end of the Mission Leg.		1000 to 99999 ft

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Data Element	Description	Default	Format
PILOT	Used to identify flight plan requests after they are saved, and flight plans after they have been submitted and processed. Pilot's name is printed on all flight plan output formats. Up to 30 characters may be entered.		free text, up to 30 chars.
POA	Point of Arrival identifies the point where the flight ends. The POA can be entered as an airport (the most common), a Navaid, a latitude longitude point, or a point defined as a range and bearing from a Navaid. On multiple leg flight plans, the POA of the current leg is entered for you as the POD of the next leg.		Navaid – 3-7 characters; ICAO – 4 characters; LAT/LON – 14 characters
POD	Point of Departure identifies the point where the flight begins. The POD can be an airport (the most common), a Navaid, a latitude-longitude point, or a point defined as a range and bearing from a Navaid. On multiple leg flight plans, the POD of the current leg is entered for you as the POA of the previous leg.		Navaid – 3-7 characters; ICAO – 4 characters; LAT/LON – 14 characters
REFUEL	On-ground refuel amount.		lbs
RESERVE	Reserve fuel. The reserve fuel in pounds required on landing at POA.	NATOPS minimum	1-99999 lbs
ROUTE INPUT OPTIONS	<p>Routing for your flight plan may be entered by any of three methods: Manual, Graphical, or Canned. Routing is always entered in pairs. Each pair consists of a Route and a Navaid. This defines the type of routing you want, and where that type of routing will take you.</p> <p><i>Manual:</i> This is the preferred method for simple routing (such as letting OPARS pick the route by using \$J(optimize using jet routes) from the point of departure to the point of arrival), or when you know</p>		

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Data Element	Description	Default	Format
	<p>the routing you want to use.</p> <p>After selecting a route type, a list of possible Nav aids is displayed. If the Nav aid you want is not listed, you can either click <a href="#">Enlarge Radius</a> to display Nav aids in a larger area, or you can type in the Nav aid ident you want in the search box. When a specified jet route has been selected, only a Nav aid on that jet route can be selected. After a Nav aid is selected, only one of the generic routings (Direct, \$J, \$R, etc.) or a specified jet route that passes through that Nav aid can be selected.</p> <p>As you enter routing and Nav aids, your entries are displayed as a list at the bottom of the screen. When you select the POA as Nav aid, this terminates the input process and the last entry in the list will display ENDROUTE as the last Nav aid.</p> <p>Changes to the selected route can be made by clicking <a href="#">Delete</a>, <a href="#">Insert</a>, or <a href="#">Edit</a>.</p> <p><i>Graphical:</i> This method is slower than the manual method, but it offers the advantage of visually viewing the available jet routes and Nav aids. The screen consists of two maps and various displays and buttons. The large map on the left is the working map, and the smaller map on the right provides an overview.</p> <p>The overview map displays the area from the POD to the POA with a great circle line drawn between the two for use as a reference while building the route. The box on the map shows how much of the area is displayed on the working map. As the route is entered, it is displayed on the overview map.</p>		

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Data Element	Description	Default	Format
	<p>The working map displays all of the jet routes and Navaids within the area marked on the overview map. This is positioned initially on the POD. As routing is selected, the map is repositioned on the last Navaid selected. You can change the area displayed by dragging the box on the right map to where you want it, then clicking <a href="#">Apply Zoom</a>. All Navaid selections are made on the working map by positioning the mouse over the desired Navaid and clicking. The Navaid nearest to the pointer will have a circle over it, and the information about the Navaid is displayed in a box beneath the map on the right. As the route is entered, it is displayed on the working map. The great circle line from the POD to the POA is displayed to give you a reference to where you are trying to go.</p> <p>Route selection is made using the Route Selection list. This list always contains the six generic routing types (Direct, \$J, etc.). If there are any jet routes that pass through the last Navaid selected, then the names of those jet routes are also displayed. By highlighting a jet route name, that jet route will be displayed on both the Working Map and the Overview Map. Select your routing by either double clicking on the routing, or highlighting the routing and clicking OK.</p> <p>Navaid selection is made by clicking on the Navaid marked with a circle. If a generic type routing was selected, any Navaid on the map can be chosen. If a specific jet route (J5, W426, etc.) was selected, then only Navaids on that jet route can be chosen. If the desired Navaid is not on the map, then move the box on the overview map where you</p>		

# OPARS USER MANUAL

Data Element	Description	Default	Format
	<p>want it and click <a href="#">Apply Zoom</a>.</p> <p>You can choose the type of Navaids that are displayed on the Working Map. From the Configure Menu, click on Waypoints. This will display a list of check boxes you use to turn specific Navaid types on or off.</p> <p>When you want to finish your routing selections, click on the Finish Routing button instead of on a Navaid. You will be asked if you want to save your input, then the Graphical Routing program will terminate.</p> <p><i>Canned:</i> This is the simplest method of all. Clicking <a href="#">Canned</a> displays a list of appropriate canned routes that you have previously saved. The appropriate routes are determined by one of the following criteria:</p> <p>No POD and POA have been entered. All of the canned routes will be listed for selection. Selecting a canned route will populate the POD, the POA, and the routing entries.</p> <p>Only the POD has been entered. All of the canned routes that have a POD the same as the one you entered will be listed for selection. Selecting a canned route will populate the POA and the routing entries.</p> <p>Only the POA has been entered. All of the canned routes that have a POA the same as the one you entered will be listed for selection. Selecting a canned route will populate the POD and the routing entries.</p> <p>Both the POD and the POA have been entered. All of the canned routes that have the same POD and POA will be listed for selection.</p>		

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Data Element	Description	Default	Format
	Selecting a canned route will populate the routing entries.		
ROUTING 0-99	The Routing keyword is used to specify the type of routing desired for each flight leg.	Direct	1 to 64 characters
SPERF	Special Performance. If your aircraft is not on the list of supported aircraft, you can select this option. You will be required to provide values for: Time to Climb, Distance to Climb, Fuel to Climb, Cruise True Airspeed, Cruise Fuel Flow, and Aircraft Name.		Climb time- 1 to 99 min.  Climb dist.- 1-999 NM  Climb fuel- 1-999999 lbs  Cruise True Airspeed- 1-9999 kts  Cruise Fuel Flow- 1-999999 lbs/hr
SPERF ALT	Special Performance Altitude is used by OPARS to determine weather information. Only a single altitude is allowed because the SPERF performance (TAS, Fuel Flow, etc.) applies to a specific altitude.		1000 to 99999 ft
SPERF BIAS	Special Performance Bias is entered as pounds of fuel, and represents the amount of fuel used for engine start, taxi, run-up and takeoff.		1 to 99999 lbs

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Data Element	Description	Default	Format
TAS	<p>The True Airspeed entry is used to specify a constant true airspeed cruise. Fuel Flow for the cruise portions of the flight will be calculated based upon the constant true airspeed value entered, the altitude, the air temperature, and the gross weight of the aircraft. The actual TAS limits vary for each aircraft and are dependent on gross weight, altitude, and air temperature. If the TAS entry is less than the maximum endurance TAS, the maximum endurance TAS is used. If the TAS entry is greater than the maximum continuous power TAS, the maximum continuous power TAS is used. This effectively provides two additional cruise configurations for aircraft that have a constant TAS cruise capability. To use maximum endurance cruise, enter a very low TAS value, and for maximum continuous power cruise, enter a very high TAS value.</p> <p>There is no default value. This is available for the following aircraft only:</p> <p>A6A, A6E, C130J, C130T, C130TH, C20F, C20FSP, C20G, C2A, E2CP, E6A, EA6A, EA6B, EC130G, EC130Q, EP3E, F5E, HC130H, HC130HH, HC130P, KA6D, KC130F, KC130J, KC130R, KC130T, P3B, P3C, P3H, P3W, RP3D, T1A, and T37B</p>		50 to 1000 kts

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Data Element	Description	Default	Format
TEMP	<p>Temperature Deviation From Standard is used to specify a constant temperature anomaly in degrees Celsius that will be used by OPARS instead of the current weather base temperature value. Limits are –20 to 20. Examples:</p> <p>TEMP &gt;-15 (15 degrees below standard atmosphere temperature)</p> <p>TEMP &gt;0 (standard atmosphere temperature)</p> <p>TEMP &gt;10 (10 degrees above standard atmosphere temperature)</p>		-20 to 20 °C
TIMEIN	This is used to specify the UTC clock time for the beginning of the Mission Leg.	TOA of Leg 1	hhmm hrs, min
TIMEOUT	This is used to specify the clock time for the end of the Mission Leg.	TOD of Leg 3	hhmm hrs, min
TOA	The Time of Arrival entry is explained above as FLTDATE & TIME.		
TOD	The Time of Departure entry is explained above as FLTDATE & TIME.		
TOG	<p>Time on Ground is used to specify the time that will be spent at the point of arrival of the current leg until takeoff time for the next leg. Tab over to the Time on Ground text box and type the hours (0 to 24) and minutes (0 to 59) in the appropriate box.</p> <p>Notes: 1. Time on Ground is only used for multiple leg flights. 2. Time on Ground is not used on the final leg of multiple leg flights. 3. Time on Ground can not exceed 24 hours and 59 minutes.</p>		hh, mm hrs, min

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Data Element	Description	Default	Format
UNIT	The unit name is printed on all flight plan output. The default unit name is entered automatically, but may be changed.	Automatically entered by OPARS from the Unit Default information	1-30 characters
UPPRALT	If an Upper Altitude is entered, OPARS will not consider altitudes above that altitude. The default is the highest altitude that the aircraft can fly, based upon weight and outside air temperature. If Upper Altitude and Lower Altitude are the same, the flight will be planned for that altitude.		1000 to 99999 ft
USER	OPARS User ID	Automatically entered by OPARS from the Unit Default information	text
VERSION	Version number of the currently installed OPARS Client software application.	Automatically entered by OPARS	text, usually 3.1
WINDF	Wind Factor is used to specify a constant wind factor in knots that will be used by OPARS instead of the current weather data base values. A negative wind factor will be applied as a head wind (against the aircraft). A positive wind factor will be calculated as a tail wind (pushing the aircraft).		-200 to 200 kts

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## E. OPARS AIRCRAFT TYPES

Table 6. OPARS Aircraft Types

ACTYPE	Aircraft Name
A10	A-10 Thunderbolt II
A4M	A-4M Skyhawk
A6A	A-6A Intruder
A6E	A-6E Intruder
AH1W	AH-1W SuperCobra
AV8B	AV-8B Harrier II
C12C	C-12C Huron
C12D	C-12D Huron
C12D2	C-12D2 Huron
C12F	C-12F Huron
C12J	C-12J Huron
C12R	C-12R Huron
C130J	C-130J Hercules
C130T	C-130T Hercules
C130TH	C-130T Hercules (heavy)
C141B	C-141B Starlifter
C20D	C-20D Gulfstream III
C20F	C-20F Gulfstream IV
C20FSP	C-20F Gulfstream IV (Special Case (Wgt differences))
C20G	C-20G Gulfstream IV
C21A	C-21A Learjet 35A
C26B	C-26B Metroliner
C2A	C-2A Greyhound
C31A	C-31A LearJet 31A
C37A	C-37A Gulfstream V
C40A	C-40A Clipper
C5A	C-5A Galaxy
C5B	C-5B Galaxy
C9B	C-9B Skytrain
C9D	C-9D Skytrain
CH53E	CH-53E Super Stallion
CT39E	CT-39E Sabreliner
CT39G	CT-39G Sabreliner
DC9	DC-9
E2C	E-2C Hawkeye
E2CP	E-2C Hawkeye
E6A	E-6A Tacamo
EA6A	EA-6A Prowler
EA6B	EA-6B Prowler
EC130G	EC-130G Hercules

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ACTYPE	Aircraft Name
EC130Q	EC-130Q Hercules
EC24A	EC-24A (DC-8)
EP3E	EP-3E Orion
F14A	F-14A Tomcat
F14D	F-14D Tomcat
F16N	F-16N Falcon
F5E	F-5E Tiger II
FA18A	F/A-18A Hornet
FA18B	F/A-18B Hornet
FA18C	F/A-18C Hornet
FA18D	F/A-18D Hornet
G266	Gulfstream III (hushkits)
GULFI	Gulfstream I
GULFII	Gulfstream II
HC130B	HC-130B Hercules (SAR)
HC130E	HC-130E Hercules (SAR)
HC130H	HC-130H Hercules (SAR)
HC130H7	HC-130H Hercules (SAR)
HC130HH	HC-130H Hercules (SAR, heavy)
HC130P	HC-130P Hercules (SAR)
HU25A	HU-25A Falcon
KA6D	KA-6D Intruder
KC130F	KC-130F Hercules
KC130J	KC-130J Hercules
KC130R	KC-130R Hercules
KC130T	KC-130T Hercules
KC135A	KC-135A Stratotanker
LC130F	LC-130F Hercules
LC130R	LC-130R Hercules
P3A	P-3A Orion
P3B	P-3B Orion
P3C	P-3C Orion
P3H	P-3H Orion
P3W	P-3W Orion
RC12D	RC-12D Huron
RC12G	RC-12G Huron
RC12K	RC-12K Huron
RC12N	RC-12N Huron
RC12P	RC-12P Huron
RC12Q	RC-12Q Huron
RP3D	RP-3D Orion
RU21H	RU-21H Ute
S3A	S-3A Viking
SH60B	SH-60B Seahawk

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ACTYPE	Aircraft Name
T1A	T-1A Jayhawk
T2C	T-2C Buckeye
T34C	T-34C Mentor
T37B	T-37B Tweet
T38A	T-38A Talon
T39D	T-39D Sabreliner
T43A	T-43A (737-200)
T44A	T-44A Pegasus
T45	T-45 Goshawk
T47A	T-47A Citation II
TA4J	TA-4J Skyhawk
TC4C	TC-4C Academe
U21A	U-21A Ute
U21F	U-21F Ute
UC12A	UC-12A Huron
UC12B	UC-12B Huron
UC12F	UC-12F Huron
UC12FH	UC-12F Huron (heavy)
UC12H	UC-12H Huron
UC12M	UC-12M Huron
UC35A	UC-35A Citation V
UC35B	UC-35B Citation V
UC35C	UC-35C Citation V
UC35D	UC-35D Citation V
UH1N	UH-1N Huey

## F. OPARS EXTENDED OVERWATER FLIGHT PROCEDURES

*Extended Overwater Flight -- A flight with an over water leg exceeding 1,000 nautical miles and with no suitable divert within 350 nautical miles<sup>3</sup>.*

The procedures discussed in this manual explain a tailored set of input parameters that activate unique calculations and output formats in support of C-9, C-130, C-20, and DC-9 naval aircraft performing long extended overwater missions. Route planning, altitude selections, true airspeed, and fuel calculations are derived from aircraft performance data contained in the appropriate *NATOPS Flight Manual*. Specific emergency data calculations for extended overwater flights are contained in Section 2 e. United States. Commander, Fleet Logistics Support Wing. CFLSWINST 3710.16, C-9/C-40 Fleet Logistics Support Wing International/Overwater Procedures Guide. NAS JRB, Ft. Worth: U.S. Navy, 3 May 2000.

### F.1 TERMINOLOGY AND COMPUTATIONS

#### F.1.1 FUEL PLANNING TERMINOLOGY

##### F.1.1.1 RESERVE FUEL

Additional fuel taken on at the departure point for en route contingencies such as wind variations, temperature deviations, and flights at less than optimal altitudes. It is the fuel that can be burned en route in addition to the planned burn off and still have the required fuel at the destination, plus alternate fuel, if required. Minimum reserve fuel is 10% of the planned burn off from departure point to destination and alternate, if required.

##### F.1.1.2 HOLDING FUEL

Planned fuel for holding at destination, or alternate, if required. OPARS uses the rule that Case I and II weather conditions require fuel for a minimum of 45 minutes at maximum endurance at 10,000 feet MSL. Case III weather conditions require fuel for a minimum of 75 minutes at maximum endurance at 20,000 feet MSL. Holding fuel does not include fuel for anticipated ATC holding, approach procedures or alternate requirements at the destination or departure airports.

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<sup>3</sup> A flight from Lajes, Azores to Rota, Spain is considered an extended overwater flight even though it is less than 1,000 NM.

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## F.1.1.3 EMERGENCY ON DECK FUEL (EODF)

The amount of fuel remaining upon landing after experiencing a rapid decompression/engine failure at the most critical point along the route of flight Equal Time Point (ETP). The absolute minimum EODF is 2,500 pounds. Actual fuel required at ETP is the fuel to continue to destination (or return) plus 2,500 pounds, that is, single engine fuel from ETP to destination plus 2,500 lbs. In situations where the calculated fuel load will not provide an EODF of 2,500 pounds, OPARS will add sufficient fuel to the contingency fuel to assure arrival with a minimum of 2,500 pounds.

## F.1.2 ETP, PSR, AND PNR COMPUTATIONS

### F.1.2.1 EQUAL TIME POINT (ETP)

ETP is computed between two suitable airports along or near the intended route of flight and is based on:

- Engine failure at the most critical point en route.
- Descent to the highest altitude permissible based on gross weight at ETP.
- Continuation at this altitude at optimum single engine cruise in accordance with the *NATOPS Flight Manual*.

$$ETP = DIST \left( \frac{GS_R}{GS_R + GS_C} \right)$$

where: ETP = equal time point in NM  
GS<sub>R</sub> = single engine ground speed (kts) to return  
GS<sub>C</sub> = single engine ground speed (kts) to continue  
DIST = total distance in NM

### F.1.2.2 POINT OF SAFE RETURN (PSR)

PSR is the furthest point along the route of flight to which an aircraft can fly and still return safely to the point of departure with a reserve (predicted on two engines).

$$PSR(time) = t = GS_2 \left( \frac{T_1}{GS_1 + GS_2} \right)$$

$$PSR(dist) = t(GS_1)$$

where: T<sub>1</sub> = all fuel onboard (in hours) for takeoff except fuel for holding and flying to departure alternate (OPARS uses 4800 lbs).

GS<sub>1</sub> = groundspeed (kts) from takeoff to midpoint.

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$GS_2$  = groundspeed (kts) from midpoint to departure point.

$PSR(time) = t$  = Time in hours to the Point of Safe Return.

$PSR(dist)$  = Distance in NM to the Point of Safe Return.

## F.1.2.3 POINT OF NO RETURN (PNR)

PNR is the point along the flight path to where the aircraft can fly and still return to the point of departure and land with no fuel remaining (based on two operational engines).

$$PNR(time) = t = GS_2 \left( \frac{T_2}{GS_1 + GS_2} \right)$$

$$PNR(dist) = t(GS_1)$$

where:  $PNR(time) = t$  = Time in hours to Point of No Return.  
 $PNR(dist)$  = Distance in NM to the Point of No Return.  
 $T_2$  = all fuel onboard for takeoff expressed in hours  
 $GS_1$  = Groundspeed (kts) from takeoff to midpoint  
 $GS_2$  = Groundspeed (kts) from midpoint to the departure point

## F.2 DATA ELEMENT DESCRIPTIONS

### F.2.1 EXTENDED OVERWATER DATA ELEMENTS

This section contains a detailed description of those data elements that are mandatory when requesting OPARS in support of an extended overwater flight. Optional data elements may be entered as appropriate. The data elements in Table 7 are arranged alphabetically in ascending order by type and then by data element.

Each data element is designated as one of two types:

- 1) **Mandatory** – Item must have an entry for OPARS to produce a flight plan.
- 2) **Optional** – Additional information to calculate specific flight requirements.

To accept a default field value when constructing a flight plan request, simply tab to the next field.

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Table 7. Overwater Data Elements

Data Element	Type
9KB Contingency Fuel	Mandatory for extended overwater flights
9KB Fuel Option ( <i>Key Element</i> )	Mandatory for extended overwater flights
9KB Hold Case	Mandatory for extended overwater flights
Aircraft Type	Mandatory
Climb Profile	Mandatory
Cruise Profile	Mandatory
Descent Profile	Mandatory
Flight Date and Time	Mandatory
Operational Weight	Mandatory
Pilot's Name	Mandatory
Point of Arrival	Mandatory
Point of Departure	Mandatory
Routing Options	Mandatory
Standard Legs	Mandatory
Start, Taxi, Etc Bias	Mandatory
Alternate Airport	Optional
Arrival Bias and Time	Optional
Cargo Change	Optional
Cruise True Air Speed	Optional

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Data Element	Type
Departure Bias and Time	Optional
Divert Airport	Optional
Drag Count	Optional
Engine Efficiency	Optional
Ice Bias	Optional

## F.2.2 CRITICAL OVERWATER DATA ELEMENTS

The following descriptions provide details on the critical data elements for an extended overwater flight plan request. A description of the full suite of OPARS data elements is provided in [Appendix D](#).

---

### 9KB CONTINGENCY FUEL

Type:	<b>MANDATORY</b> for Extended overwater (9KB) flights.
Definition:	The amount of extra (contingency) fuel to be loaded, as specified by the crew. This is in addition to the required reserve.
Parameters:	0 to 20000 pounds
Default Value:	0 (zero), no contingency fuel
Example:	1250
Error Message:	Error. Contingency Fuel Entry Must be Between 0 and 20000

---

### 9KB FUEL OPTION

Type:	<b>MANDATORY</b> for 9KB flight plans
Definition:	Specifies the fuel option for the flight leg. Extended overwater flights must select the <b>9KB</b> fuel option.
Parameters:	Option buttons. Required entry: <b>9KB</b>

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Default Value:	'Calculate Fuel Reserve'
Error Message:	Not applicable.
Notes:	The 9KB Fuel Option is the key data element in an extended overwater flight plan request. When OPARS detects the 9KB Fuel Option selection it will calculate the required critical points along the flight path.

---

## 9KB HOLD CASE

Type:	<b>MANDATORY</b> for 9KB flight plans
Definition:	Specifies the type of Holding Case for fuel calculation planning at the destination.
Parameters:	Valid entries and explanation:  I = 45 min holding fuel at 10,000 ft.  II = 45 min holding fuel at 10,000 ft. (with Alternate required)  III = 75 min holding fuel at 20,000 ft.  Based on definitions described in the <i>NATOPS Flight Manual</i> .
Error Message:	If Hold Case II is selected a warning message will state that an Alternate Airport is required.

---

## AIRCRAFT TYPE

Type:	<b>MANDATORY</b> (entered in Leg I only)
Definition:	This field is used to specify the type of aircraft and flight profile. For the extended overwater (9KB) calculations the aircraft must be a C9B, C9D, DC9, C130T, C20D, C20E, or C20F.
Parameters:	Entry from list.
Default Value:	Aircraft type designated in Unit Defaults
Examples:	C9D, C130T, C20E, DC9

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Error Message:

None (must pick from list)

## F.3 SAMPLE EXTENDED OVERWATER FLIGHT PLAN INPUT

OPARS Request Editor (POD/POA) Leg #1 Of 1

Point of Departure: Airport..., Lat/Lon..., Navaid..., Rng/Brng...  
Airport: BUCHOLZ AAF

Point of Arrival: Airport..., Lat/Lon..., Navaid..., Rng/Brng...  
Airport: MIDWAY ATOLL

Route Input Options: Manual..., Graphical..., Canned...

Flight Date And Time(GMT):  
☒ Departure ☐ Arrival  
☐ No Time On This Leg  
GMT Date (mm/dd/yyyy): 08/26/2002 Set  
GMT Time (hhmm): 0600

Time On Ground:  
Hours:   
Minutes:

Routing:  Save As Canned Route

Help: ROUTE INPUT OPTIONS - Routing for your flight may be entered by any of three methods, MANUAL, GRAPHICAL or CANNED. Routing is always entered in pairs information. Each pair consists of a ROUTE and a NAVAID. This defines the type of

Figure 48. OPARS Request Editor (POD/POA) (Extended Overwater Example)

The Request Editor (POD/POA) dialog shown in Figure 48 shows the POD (PKWA) and the POA (PMDY) entries, the Flight Date and Time of Departure, and the routing (Direct to POA).

OPARS Request Editor (Aircraft) Leg #1 Of 1

Aircraft Type: C9B

Operational Weight: 65500

Drag Count: 0

Climb: LONG RANGE

Cruise: MAXIMUM RANGE

Descent: FLIGHT IDLE

Cargo Change Options:  
☐ Do Not Use  
☒ Cargo Change Entered  
☐ OPARS Calculate  
Cargo Change: 8000

Help: OPERATIONAL WEIGHT is a mandatory entry (can be entered only on the first leg). This line is used to specify the operational weight of the aircraft in pounds. Operational weight is defined as the dry weight of the aircraft plus the weight of the crew, their baggage and miscellaneous equipment. It does not include fuel or cargo. The default value for your selected aircraft is entered, but you can change it.

Figure 49. OPARS Request Editor (Aircraft) (Extended overwater Example)

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Figure 49 shows the default aircraft type (from the Unit Defaults); default operational weight; default drag count; climb, cruise, and descent profiles; and the cargo change option selections.

OPARS Request Editor (Fuel) Leg #1 Of 1

Fuel Options

- ☐ Fuel Load
- ☐ Fuel Maximum
- ☐ Fuel Reserve
- ☐ Calculate Fuel Reserve
- ☒ 9KB

9KB ContFuel

2000

On-Ground Refuel Option

- ☒ Yes
- ☐ No

O.K. Cancel

Bias Options

Start, Taxi, Etc Bias

1323

Ice Bias

Fuel Type

JP-5

9KB Hold Case

- ☒ I-45 Min at 10,000 Ft
- ☐ II-45 Min at 10,000(Alternate)
- ☐ III-75 Min

Departure Bias

500

Minutes After Takeoff

5

Arrival Bias

500

Minutes Before Landing

5

Help

MINUTES BEFORE LANDING an optional entry. It is used to account for any extra time, in minutes, used for arrival procedures during the approach phase of the flight.

Figure 50. OPARS Request Editor (Fuel) (Extended overwater Example)

Figure 50 shows the flight plan settings for fuel options (9KB is Mandatory for extended overwater calculations), 9KB contingency fuel, default fuel type, bias settings, and the default 9KB hold case. Any bias setting that is blank will be interpreted as zero.

## F.4 THE EXTENDED OVERWATER FLIGHT PLAN OUTPUT FORMAT

### F.4.1 KNEEBOARD 9 OUTPUT FORMAT

The Kneeboard 9 (9KB) format was developed to display the special calculations<sup>4</sup> required for extended overwater flights. The following paragraphs give a line-by-line description of each element in the 9KB output format.

### F.4.2 9KB DETAILED EXPLANATION

#### 9KB Flight Plan Example

```
(1)  FLIGHT PLAN FOR CDR SKYTRAIN II          COMPUTED 21AUG2000 2215Z
(2)  BASED UPON 2000082112 WEATHER DATA
(3)  BASED UPON 10Aug2000-06Sep2000 AERONAUTICAL DATA
(3)  LEG01 STANDARD PKWA   TO PMDY           22AUG2000
```

<sup>4</sup> Special calculations include Equal Time Point, Point of Safe Return, and Point of No Return.

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```

(4) ACFT TYPE C9BPNF          DRAG: 0          EFF: 100
(5) PLANNED FOR ETD 0900Z          INITIAL CRUISE FLIGHT LEVEL 330
(6) FUEL TIME DIST ARRIVE RAMP LAND CARGO OPNLWT
(7) POA 18924 03/29 1440 0329Z 99574 80649 8000 065500
(8) ALT . . .
(9) ENRT RES 1893
(10) HOLDING 3257 (CASE I)
(11) CONT FUEL 2000
(12) TOT 26074 4/48
(13) FUEL BIAS: 1323 DBIAS: 500 ABIAS: 500 IBIAS: 0
(14) ROUTING USED FOR THIS LEG
(15) PKWA .. PMDY
(16) TO LAT/LONG FL MC MH WIND G/S TAS DIS CUMD ETE T/BO M/BO EFR
(17) PKWA N08430 0 *** *** 00000 *** *** 000 0000 0/01 013 014 24751
(18) E167440
(19) 10169 N10000 253 25.7 26.8 09023 *** *** 093 0093 0/13 035 038 22272
(20) E168364
(21) *TOC* N11229 330 26.1 26.5 07040 *** *** 100 0193 0/33 056 061 20814
(22) E169341
(23) 15172 N15000 330 26.2 25.6 02529 419 449 263 0456 1/11 088 097 17448
(24) E172061
(25) *ETP* N19092 330 27.1 25.9 33522 427 447 306 0762 1/54 125 137 14521
(26) E175125
(27) 20176 M20000 370 27.1 26.6 33535 429 451 061 0823 2/02 131 145 13534
(28) E175484
(29) *PSR* N20391 370 27.1 26.6 32539 436 451 049 0872 2/08 137 150 13491
(30) E178194
(31) *PNR* N23139 370 28.4 28.2 31071 440 450 193 1065 2/35 158 173 11355
(32) E178243
(33) *SDP* N25591 370 29.7 29.5 31120 427 447 207 1272 3/04 180 198 9562
(34) W179184
(35) PMDY N28120 0 29.5 30.3 03010 *** *** 168 1440 3/38 196 216 7150
(36) W177230
(37) *TOC* = TOP OF CLIMB
(38) *SDP* = START DESCENT POINT
(39) *ETP* = EQUAL TIME POINT - Cruise Altitude to ETP
                                - SE Alt (FL200) to (PKWA/PMDY)
(40) *PSR* = POINT OF SAFE RETURN
(41) *PNR* = POINT OF NO RETURN
(42) TOTAL 1ST HALF 2ND HALF
(43) WIND FACTOR CRUISE -23KTS -30KTS -15KTS
(44) FL200 -19KTS -21KTS -17KTS
(45) FL150 -14KTS -19KTS -8KTS
(46) ADDITIONAL ALTITUDE DATA
(47) FL/FUEL/ETE (330/ 20400/ 3+42) (290/ 21000/ 3+48) (270/ 21700/ 3+54)
(48) EMERGENCY DATA AND FUEL REQUIREMENTS
(49) Normal Configuration:
(50) DIST TIME TIME FUEL USED/REMAINING
(51) POSITION FM PKWA TO PKWA TO PMDY
(52) ETP N18213 E174345 702 01+44 01+44 11282/14793
(53) Single Engine (FL200):
(54) DIST TIME TIME FUEL USED/REMAINING
(55) POSITION FM PKWA TO PKWA TO PMDY
(56) ETP N18419 E174498 727 02+10 02+10 11554/14521
(57) Pressure Loss (FL150):
(58) DIST TIME TIME FUEL USED/REMAINING
(59) POSITION FM PKWA TO PKWA TO PMDY
(60) ETP N18460 E174529 732 02+05 02+05 11608/14466
(61) SE ETP EMERGENCY FUEL REQUIRED/AVAILABLE/ON DECK 12519/14521/ 4502
(62) PL ETP EMERGENCY FUEL REQUIRED/AVAILABLE/ON DECK 13671/14466/ 3296

```

## 9KB FLIGHT PLAN EXPLANATION

```

LINE 1      FLIGHT PLAN FOR          [Printed Label]
            CDR SKYTRAIN II          Pilot's Name
            COMPUTED 21AUG2000 2215Z  flight plan computation time (ZULU)

```

```

LINE 2      BASED UPON 2000082112 WEATHER DATA
            2000      Year

```

# OPARS USER MANUAL

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08        Month (August)  
21        Date  
12        Synoptic Hour from which Database was constructed

LINE 3        **BASED UPON 10Aug2000-06Sep2000 AERONAUTICAL DATA**  
Valid dates of the DAFIF database.

LINE 3        **LEG01 STANDARD PKWA TO PMDY        22AUG2000**  
LEG01                Leg number  
STANDARD            Leg type (Standard, Mission or Refuel)  
PKWA                Point of Departure  
PMDY                Point of Arrival  
22AUG2000            Date of Departure

LINE 4        **ACRFT TYPE C9BFNF DRAG 0 EFF 100 FUEL JP-5**  
C9BFNF                Aircraft type and configuration (C-9B)  
DRAG 0                Drag count or drag index (0)  
EFF 100                Efficiency of engine(s) (100%)  
FUEL JP-5             Fuel type (JP-5)

LINE 5        **PLANNED FOR ETD 0900Z INITIAL CRUISE LEVEL 330**  
0900Z                Hour of departure (ZULU)  
330                Initial cruise level at 33,000 ft.

LINE 6        Column Headings:  
FUEL        Fuel weight in pounds  
TIME        Time in hours/minutes  
DIST        Distance in nautical miles  
ARRIVE      Time of arrival (ZULU)  
RAMP        Ramp weight in pounds  
LAND        Landing weight in pounds  
CARGO       Cargo weight in pounds  
OPNLWT      Operational weight of aircraft in pounds

LINE 7        POA        Fuel, Time and Weight calculations from Point of Departure  
                 to Point of Arrival  
18924        Fuel required from POD to POA  
3/29        Time in Hours/Minutes  
1440        Distance in nautical miles from POD to POA  
0329Z        Time of arrival (ZULU)  
99574        Total ramp weight at time of engine start in pounds  
80649        Landing weight in pounds  
8000        Cargo weight in pounds  
065500       Operational weight in pounds

LINE 8        **ALT**        Fuel and Time from POA to Alternate Airport  
...        Alternate not requested

LINE 9        **ENRT RES 1893** En route reserve which is 10% of fuel required from  
                 POD to POA to Alternate

LINE 10       **HOLDING 3257 (CASE I)** Fuel in pounds for holding at POA as  
                 determined by the requested HOLD CASE.  
CASE I:        Fuel for holding 45 minutes at maximum endurance  
                 at 10000 feet MSL

# OPARS USER MANUAL

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LINE 11      **CONT FUEL 2000**      Contingency fuel in pounds requested by the crew  
that is in addition to reserve requirements, or  
fuel that is added by OPARS to fulfill ETP  
Emergency Fuel requirements

LINE 12      **TOT**      Total Fuel and Time calculations  
26074      Total Fuel (EN ROUTE + ALT + ENRT RES +  
HOLDING + CONT FUEL)  
4/48      Total Time available in Hours/Minutes

LINE 13      **FUEL BIAS 1323**      Fuel used for Taxi and Takeoff in pounds  
**DBIAS 500**      Departure Bias fuel in pounds  
**ABIAS 500**      Arrival Bias fuel in pounds  
**IBIAS 0**      Icing Bias fuel in pounds

LINE 14      **ROUTING USED FOR THIS LEG**      [Printed Label]

LIKE 15      **PKWA .. PMDY**      Summary of routing (PKWA to PMDY)

LINE 16      Column Headings:  
TO      Checkpoint/Navaid Name  
LAT/LONG      Latitude/Longitude of the Checkpoint/Navaid  
FL      Flight Level (Altitude in 1000's of feet)  
MC      Magnetic Course in degrees  
MH      Magnetic Heading in degrees  
WIND      Wind direction and velocity (DDDVV)  
G/S      Total fuel burnoff in 100's of pounds  
TAS      True Air Speed in knots  
DIS      Distance in miles  
CUMD      Cumulative Distance in miles  
ETE      Elapsed Time En route  
T/BO      Total fuel burnoff in hundreds of pounds  
M/BO      Maximum allowable fuel burnoff in hundreds of  
pounds(T/BO + 10% of T/BO)  
EFR      Estimated Fuel Remaining in pounds

LINE 17      PKWA      Point of Departure name (ICAO ident)  
N08430      POD Latitude, 8 degrees 43.0 minutes North  
0      Flight level legs than 1000 feet  
\*\*\*      Magnetic Course (not computed for POD)  
\*\*\*      Magnetic Heading (not computed for POD)  
00000      Wind Direction and Velocity (dddvv)  
\*\*\*      Ground Speed (not computed for POD)  
\*\*\*      True Airspeed (not computed for POD)  
000      Distance  
0000      Cumulative distance  
0/01      Time en route (1 minute)  
013      Total fuel burnoff (1300 pounds)  
014      Maximum fuel burnoff (1400 pounds)  
24751      Estimated fuel remaining (24751 pounds)

LINE 18      E167440      POD Longitude, 167 degrees, 44.0 minutes East

LINE 19      10169      Checkpoint/Navaid name  
N1000      Latitude 10 degrees 00.0 minutes  
253      Flight level 25300 feet

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# OPARS USER MANUAL

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	25.7	Course 025.7 degrees magnetic
	26.8	Heading 026.8 degrees magnetic
	09023	Wind 090 degrees true at 23 knots
	***	Ground speed (not computed for climb)
	***	True airspeed (not computed for climb)
	093	Distance 93 nautical miles
	0093	Cumulative distance 93 nautical miles
	0/13	En route time 0 hours and 13 minutes
	035	Fuel burnoff 3500 pounds
	038	Maximum fuel burnoff 3800 pounds
	222272	Estimated fuel remaining 22272 pounds
LINE 20	E168364	Longitude 168 degrees 36.4 minutes East
LINE 21	- LINE 36	Covers remaining checkpoints and Point of Arrival
LINE 37	- LINE 41	Defines abbreviations for OPARS inserted points
LINE 42	<b>TOTAL</b>	<b>1ST HALF</b> <b>2ND HALF</b> [Printed Label]
LINE 43	<b>WIND FACTOR CRUISE</b>	Wind factors at the cruise altitudes
	-23KTS	Total wind factor is minus 23 knots
	-30KTS	First half wind factor is minus 30 knots
	-15KTS	Second half wind factor is minus 15 knots
LINE 44	<b>FL200</b>	Wind factors at 20000 feet
	-19KTS	Total 20000 ft wind factor is minus 19 knots
	-21KTS	First half 20000 ft wind factor is minus 21 knots
	-17KTS	Second half 20000 ft wind factor is minus 17 knots
LINE 45	<b>FL150</b>	Wind factors at 15000 feet
	-14KTS	Total 15000 ft wind factor is minus 14 knots
	-19KTS	First half 15000 ft wind factor in minus 19 knots
	-8KTS	Second half 15000 ft wind factor is minus 8 knots
LINE 46	<b>ADDITIONAL ALTITUDE DATA</b>	[Printed Label]
LINE 47	<b>FL/FUEL/ETE</b>	Fuel and Time estimates for altitudes other than the selected cruise altitude
	(330/ 20400/ 3+42)	Cruise at 33000 ft requires 20400 pounds of fuel and 3 hours and 42 minutes
	(290/ 21000/ 3+48)	Cruise at 29000 ft requires 21000 pounds of fuel and 3 hours and 48 minutes
	(270/ 21700/ 3+54)	Cruise at 27000 ft requires 21700 pounds of fuel and 3 hours and 54 minutes
LINE 48	<b>EMERGENCY DATA AND FUEL REQUIREMENTS</b>	[Printed Label]
LINE 49	<b>Normal Configuration</b>	[Printed Label]
LINE 50	<b>DIST</b>	<b>TIME</b> <b>TIME</b> <b>FUEL USED/REMAINING</b> Column headings
LINE 51	<b>POSITION</b>	<b>FM PKWA</b> <b>FM PKWA</b> <b>TO PKWA</b>
LINE 52	ETP	Equal Time Point data

# OPARS USER MANUAL

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N18213 E174345      Latitude 18 degrees 21.3 minutes North  
 Longitude 174 degrees 34.5 East  
 702                    702 nautical miles from PKWA  
 1+44                  En route time 1 hour and 44 minutes from PKWA  
 1+44                  En route time 1 hours and 44 minutes to turn  
                          around and return to PKWA  
 11282/14793          Fuel used to ETP is 11282 pounds and fuel  
                          remaining at ETP is 14793 pounds

LINE 53      **Single Engine (FL200)**                    [Printed Label]

LINE 54      **DIST      TIME              TIME              FUEL USED/REMAINING**      Column headings

LINE 55      **POSITION              FM PKWA              FM PKWA              TO PKWA**

LINE 56      ETP                              Equal Time Point data  
 N18419 E174498      Latitude 18 degrees 41.9 minutes North  
                          Longitude 174 degrees 49.8 East  
                          727                              727 nautical miles from PKWA  
                          2+10                            En route time 2 hours and 10 minutes from PKWA  
                          2+10                            En route time 2 hours and 10 minutes to turn  
                                                       around and return to PKWA  
                          11554/14521              Fuel used to ETP is 11554 pounds and fuel  
                                                       remaining at ETP is 14521 pounds

LINE 57      **Pressure Loss (FL150)**                    [Printed Label]

LINE 58      **DIST      TIME              TIME              FUEL USED/REMAINING**      Column headings

LINE 59      **POSITION              FM PKWA              FM PKWA              TO PKWA**

LINE 60      ETP                              Equal Time Point data  
 N18460 E174529      Latitude 18 degrees 46.0 minutes North  
                          Longitude 174 degrees 52.9 East  
                          732                              732 nautical miles from PKWA  
                          02+05                           En route time 2 hours and 05 minutes from PKWA  
                          02+05                           En route time 2 hours and 05 minutes to turn  
                                                       around and return to PKWA  
                          11608/14466              Fuel used to ETP is 11608 pounds and fuel  
                                                       remaining at ETP is 14466 pounds

LINE 61      **SE ETP EMERGENCY FUEL REQUIRED/AVAILABLE/ON DECK**

12519              12519 pounds of fuel is required at the Equal Time Point  
                          to continue to the destination single engine and arrive  
                          with a minimum of 2500 pounds of fuel  
 14521              Estimated fuel remaining at the ETP is 14521 pounds  
 4502              The fuel remaining at destination is 4502 pounds if an  
                          engine is lost at ETP and the flight continues

LINE 62      **PL ETP EMERGENCY FUEL REQUIRED/AVAILABLE/ON DECK**

13671              13671 pounds of fuel is required at the Equal Time Point  
                          to continue to the destination at FL150 with a pressure  
                          loss and arrive with a minimum of 2500 pounds of fuel.  
 14466              Estimated fuel remaining at the ETP is 14466 pounds.  
 3296              The fuel remaining at destination is 3296 pounds if  
                          pressure is lost at ETP and the flight continues at  
                          FL150.

## G. OPARS UPDATE PROCEDURES

### G.1 UPDATE CYCLE

The OPARS aeronautical databases are updated every 28 days in accordance with the National Imagery and Mapping Agency (NIMA) Digital Aeronautical Flight Information File (DAFIF) update cycle. New information on waypoints, Navaids, and airports is included in each update.

### G.2 UNINSTALLING OPARS 3.0

Although OPARS 3.1 can be installed over OPARS 3.0, it is preferred that you uninstall OPARS 3.0 before starting the OPARS 3.1 installation process. This will allow you to recover hard drive space taken up by extraneous OPARS 3.0 files left over from the OPARS 3.1 installation.

- 1) To save your OPARS 3.0 Flight Plan Requests and completed Flight Plans, Move or Copy the \FLTPLAN and \REQUESTS folders and their contents to a temporary location. To preserve any canned routes you may have saved, Move or Copy the \UTIL\canned.dat file to a temporary location.
- 2) Delete the OPARS.INI file.
  - For Win9X, the file is located in the Windows folder.
  - For Win2000, WinXP, and WinNT, the file is located in the Windows\System32 folder.
- 3) Delete the \OPARS folder and all its sub-folders.
- 4) If applicable, delete the OPARS 3.0 Shortcut on your desktop.
- 5) If applicable, delete the OPARS 3.0 shortcut from your Start menu
  - Click Start | Settings | Taskbar
  - Select the **Start Menu Programs** tab
  - In the Customize Start Menu area, click **Remove**
  - Highlight the OPARS 3.0 shortcut and click **Remove**
  - Click **Close**, then click **OK**

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**NOTE:** At this point you must install OPARS 3.1. Continue with Step 6. after you have completed the installation.

- 6) Copy the contents of your saved \REQUESTS folder from the temporary location into the newly created \REQUESTS folder for OPARS 3.1.
- 7) Copy the contents of your saved \FLTPLAN folder into the newly created \FLTPLAN folder for OPARS 3.1.
- 8) Copy the canned.dat file into the newly created \UTIL folder for OPARS 3.1.
- 9) Delete the old \FLTPLAN and \REQUESTS folders and the old canned.dat file from their temporary locations.

OPARS 3.0 has been removed from your system.

## G.3 OPARS 3.1 INSTALLATION PROCEDURE

Here are the procedures for installing the OPARS program files on your computer:

**NOTE:** If installing from an OPARS distribution CD-ROM, skip to Step 11.

- 1) If it does not already exist, create a folder on your C: drive named [opars\\_download](#).
- 2) Open your Web browser and navigate to <https://www.fnmoc.navy.mil>.
- 3) Click **FULL ACCESS**
- 4) Type your assigned User Name and Password and click **OK**.
- 5) In the left frame, scroll down to the Aviation Applications heading.
- 6) Click [Opars 3.1 Software](#) as shown in Figure 51

# OPARS USER MANUAL

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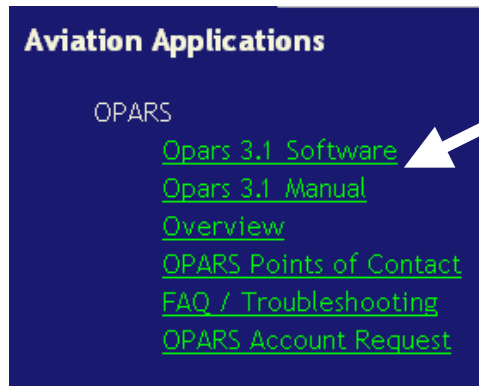



Figure 51. Aviation Applications Menu

- 7) In the right frame, scroll down to the OPARS 3.1 CUSTOMER INTERFACE SOFTWARE table.
- 8) Click on the yellow download symbol  to download the approximately 23 MB `Opars30.exe` file.
- 9) You can either Save the file to your computer and manually initiate the installation or you can Open the file on download and automatically start the installation process. The following steps assume you have chosen to Save the file on your computer.
- 10) Save the `opars31.exe` file to the `opars_download` folder you created in Step 1. When the download is complete, close your Web browser and use the Windows Explorer or My Computer to navigate to the `opars_download` folder.
- 11) Double-click on the `opars31.exe` file to start the installation process.
- 12) In the first OPARS window, select Install OPARS 3.1.

**NOTE:** For a reinstall of OPARS 3.1, click on Reinstall OPARS 3.1 (Limited user interaction should be required). Only new or modified files will be replaced or added. Your Unit Defaults and Communication Parameters dialogs will be displayed for verification.

- 13) At the “Welcome to the InstallShield Wizard for OPARS 3.1” window, click **Next** to proceed or **Cancel** to quit the installation process.
- 14) The Select OPARS Directory dialog directs the installation program to the location for the OPARS 3.1 files. The default location is `C:\Program Files\OPARS`. If you desire to install OPARS in a different location, click **Browse**. Enter the desired path and installation folder name and click **OK**. Once the proper location is set, click **Next** to continue the process. Click **Back** to return to the Welcome screen. Click **Cancel** to quit the installation process.

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- 15) Next up is the Select OPARS AERODB Directory dialog. It directs the installation program to the location for the OPARS Aeronautical Database files. The default location will be the root directory for the OPARS program in a subfolder named \AERODB. Accepting the default location is recommended. Click **Next** to continue the process, click **Back** to return to the previous dialog, or click **Cancel** to quit the installation process.
- 16) In the Start Copying Files dialog, click **Next** to continue. The installation program will display the progress of the files being installed.

**NOTE: FOR WINDOWS 95/98 SYSTEMS —**

Active Directory Service Interface Version 2.5 may need to install binary files and providers required for your computer. If this dialog is displayed, click **Yes** to continue.

Click **Yes** after reading the Supplemental End User License Agreement.

If the message, "Incorrect INF file syntax in section 'CheckForPrevVer' is displayed, click **OK**.

At the Welcome to the Directory Service Client Setup Wizard dialog, click **Next** to install the DS Client or **Cancel** to quit the process.

When the installation is complete, click **Finish**.

Restart your computer when prompted.

- 17) At the InstallShield Wizard Complete dialog (see Figure 52) you are prompted to restart your computer. Restarting the computer will update the system files needed for OPARS to run properly.

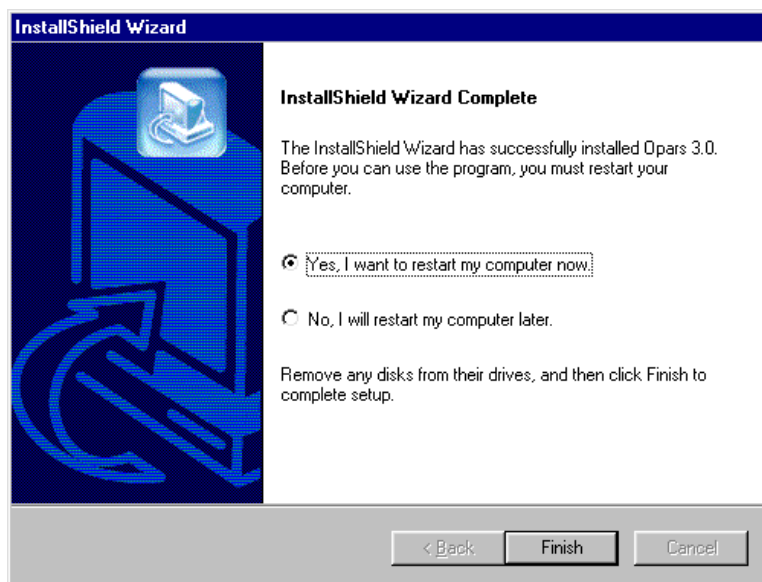


Figure 52. InstallShield Wizard Restart Prompt

**If you choose to restart your computer later, the configuration of OPARS will not be completed until the next time the computer is restarted.**

- 18) After restarting, the OPARS Unit Defaults dialog is displayed, enter your Unit Name, Aircraft Type, and Local GMT Correction in the appropriate text entry

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boxes. Local GMT Correction is the adjustment to local time to make it agree with GMT (for example, -8). Click **OK** to continue. See Section 5.2.3 Local GMT Correction for more information on the GMT Correction.

19) In the Communication Setup dialog, ensure the information listed is correct. When finished, click **OK** to continue.

- **Server Universal Resource Locator**

Server URL– <https://www.fnmoc.navy.mil/cgi-bin/OPARS/server>

Metcast Server URL– <https://www.fnmoc.navy.mil/cgi-bin/mcsrvr/rest/server>

- **OPARS Account Information**

Enter your User Name and Password

- **Request Controls**

Click the desired settings

- **Output Controls**

Select either NFP or CRD output formats

- **Proxy Server Information**

If your Internet connectivity is through a Proxy Server, obtain the correct information from your network administrator and enter it in the appropriate text entry boxes.

- OR -

To check for a proxy server yourself:

**Internet Explorer:** Start Internet Explorer. Select **Tools > Internet Options**.

Click the **Connections** tab and then click **LAN Settings**

- If the “Use proxy server (these settings will not apply to dial-up or VPN connections)” box is not checked, you do not use a proxy server.
- If the box is checked, make a note of the specified IP Address and Port Number for the proxy server. Type these entries into the OPARS Communication Setup dialog Proxy Server Information settings.

**Netscape:** Start Netscape Communicator. Select **Edit > Preferences**. Expand the Advanced category, click **Proxies**.

- If 'Direct connection to the Internet' is selected, there is no proxy server.

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- If "Manual proxy configuration" is selected, click **View** to display the settings. Make a note of the address and port number entered for the HTTP proxy. Type this entry into the OPARS Communication Setup dialog Proxy Server Information settings.
- If "Automatic proxy configuration" is selected, make a note of the entry in the "Configuration Location (URL)" text box. Type this entry into the OPARS Communication Setup dialog Proxy Server Information settings.

If the Tunnel proxy type (default value) does not work (Can't connect to OPARS), change the OPARS Communication setting to the CERN proxy type and try that.

- 20) When the information prompt indicating the OPARS 3.1 installation is complete is displayed, click **OK**.
- 21) An OPARS 3.1 icon should have been installed on your desktop. You may also start the program from the Programs menu on the Start bar.
- 22) To verify the effective dates of the aeronautical database:
  - Start OPARS
  - On the OPARS menu bar, select **File | Display | Aeronautical DB Effective Dates**.
  - Note the effective dates. At the end of the effective period, you must complete the Aeronautical Database Update process to download and install the current database file.
- 23) Build and submit a short flight plan request to ensure the installation and configuration were successful.
- 24) After the successful installation of the OPARS program, the OPARS30.exe file can be deleted from the \OPARS\_download folder. Do not delete the \OPARS\_download folder since it will be used each month to download and install the updates to the OPARS Aeronautical Database files.

## G.4 AERONAUTICAL DATABASE DOWNLOAD AND INSTALLATION INSTRUCTIONS

The following steps describe the procedure to download and update the OPARS Aeronautical Database files.

- 1) If it does not already exist, create a folder named OPARS\_download on the same drive where OPARS is installed.

# OPARS USER MANUAL

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- 2) Open your Web browser and navigate to <https://www.fnmoc.navy.mil>.
- 3) Click **PUBLIC ACCESS**
- 4) In the left frame, scroll down to the **Aviation Applications** heading.

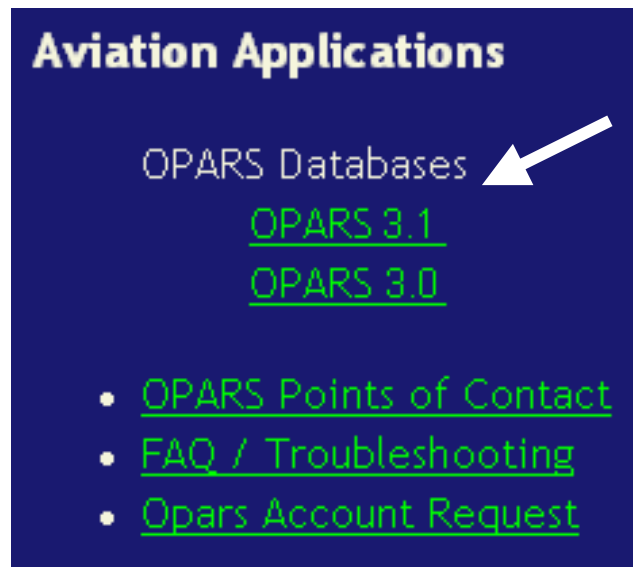



Figure 53. Aviation Applications Menu on the Public Web Page

- 5) Click **OPARS 3.1** as shown in Figure 53 above.
- 6) In the right frame, scroll down to the OPARS 3.1 CUSTOMER INTERFACE SOFTWARE table.
- 7) Click on the yellow download symbol  to download the 11.8 MB Aerodb.exe file.
- 8) You can either Save the file to your computer and manually initiate the installation or you can Open the file on download and automatically start the installation process. The following steps assume you have chosen to Save the file on your computer.
- 9) Save the file to your \OPARS\_download folder. When the step is completed, close your Web browser.

**CAUTION:** Do not download the update file to the \temp or \OPARS folders.

- 10) Use the Windows Explorer or My Computer to navigate to the \OPARS\_download folder.

# OPARS USER MANUAL

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- 11) Double-click on the Aerodb . exe file to start the installation process.

**NOTE:** If the OPARS program cannot be located on the computer, the message “OPARS 3.1 Not Installed. You must Install OPARS 3.1 Prior to Installing The Aeronautical Database” will be displayed. Click OK and refer to Section G.3 OPARS 3.1 INSTALLATION PROCEDURE

- 12) As shown in Figure 54, a dialog will display the effective dates of the currently installed Aero DB and the dates of the Aero DB files to be installed. Click **Next** to start the update process or **Cancel** to quit the update process.

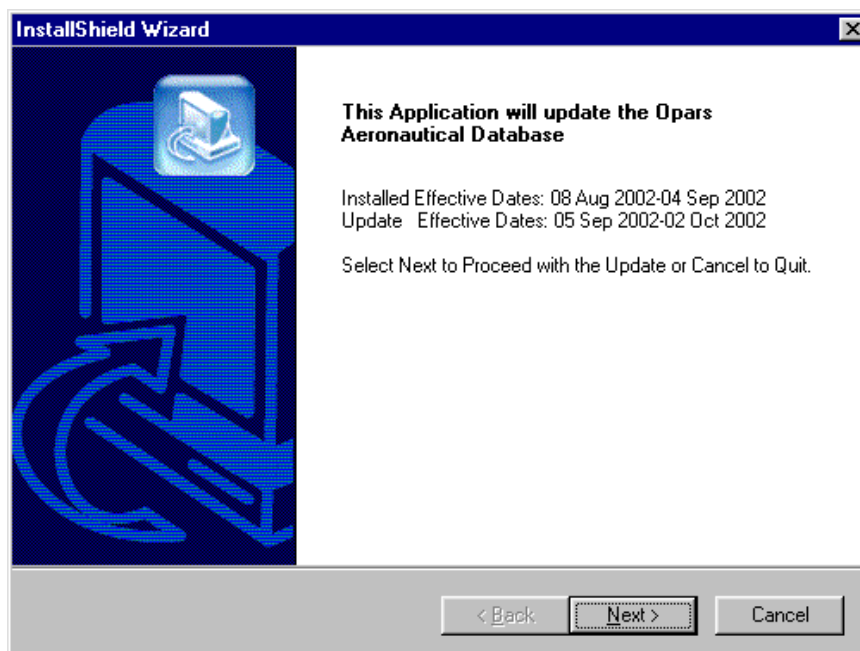


Figure 54. Aeronautical Database Effective Dates Message

- 13) The update files will be decompressed and copied to the \aerodb subfolder under \OPARS. When the process has completed an “OPARS AeroDB Update Complete” prompt will display the effective dates of the newly installed files as shown in Figure 55.

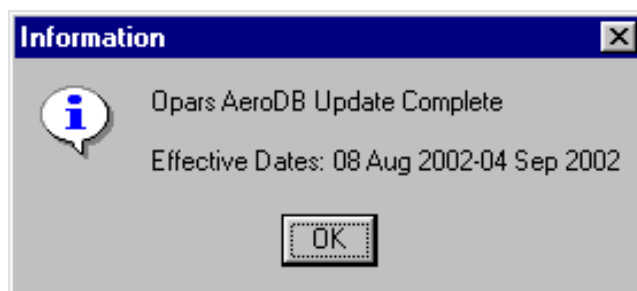


Figure 55. Aeronautical Database Update Complete Prompt

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**NOTE:** Notice the effective dates. The files are valid only for these dates. When the files are no longer effective, you will have to repeat this update process.

- 14) Click **OK**
- 15) Build and submit a short flight plan request to ensure the update process was successful.
- 16) Delete the Aerodb.exe file from the \OPARS\_download folder.